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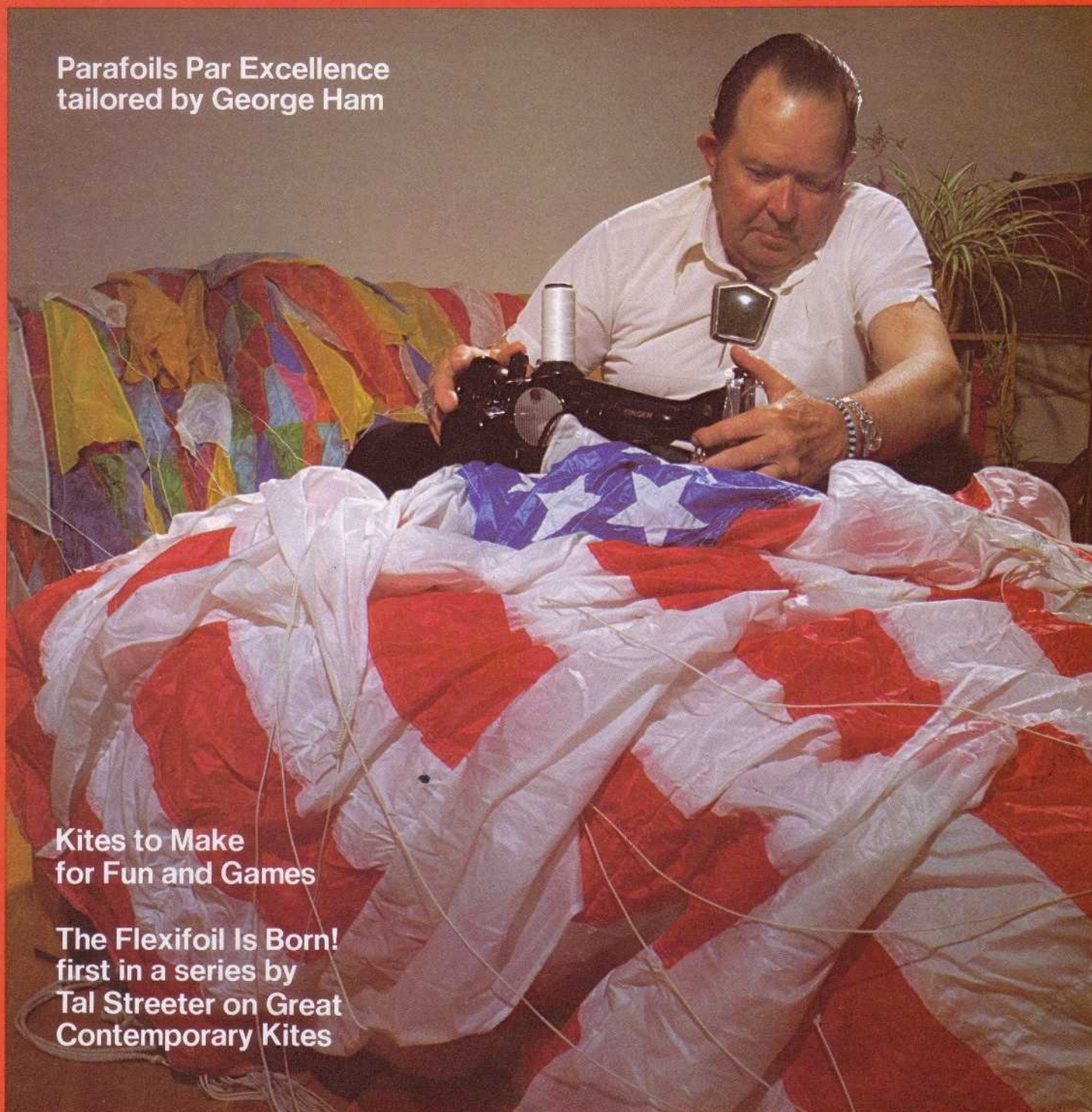
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WINTER 1979-80

quarterly journal of the worldwide kite community

**Parafoils Par Excellence
tailored by George Ham**

**Kites to Make
for Fun and Games**

**The Flexifoil Is Born!
first in a series by
Tal Streeter on Great
Contemporary Kites**



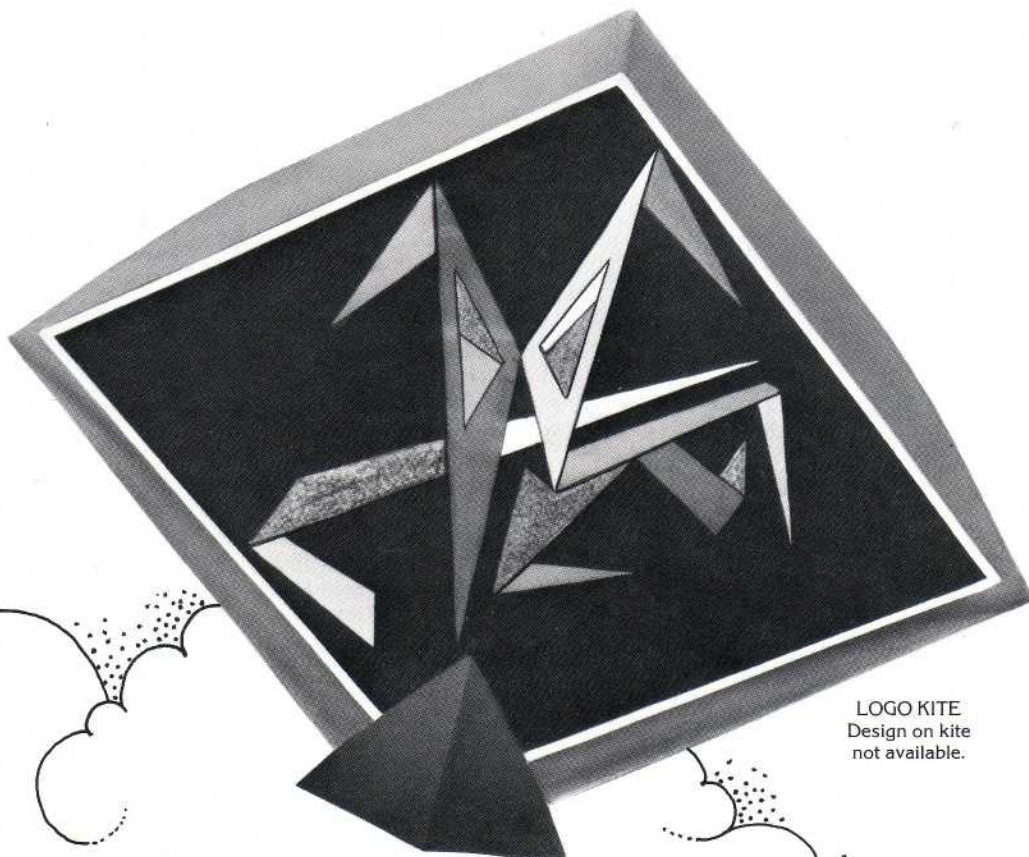
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For a full color catalog write to:
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Kite associations and clubs are located around
the U.S. and the world. *Kite Lines* works for
and with all of them and maintains an
updated file on them. Write for information
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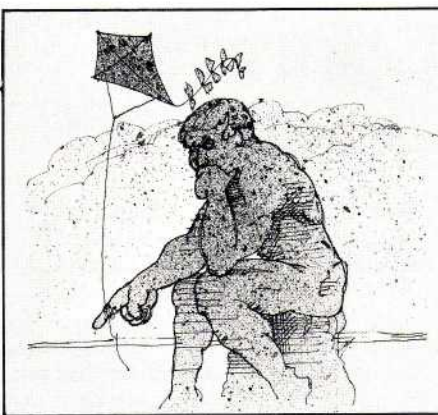
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Cover

George Ham sews the "superstar" of his kite collection, the
American Flag Parafoil. It's the latest of 15 models he has made
in a range of sizes and visual effects to stun onlookers at
San Francisco's Marina Green. Martin Payne Dowling tells the
story in words and photographs (see pages 20-21).



The mixed blessings of modern technology are nowhere better illustrated than in the ubiquitous photocopiers scattered through business offices, schools, postal stations, libraries and shopping centers across our land. How did we ever get along without Xerox® and its competitors to transfer information both trivial and weighty with incredible speed, economy and convenience? The copier is Everyman's printer.

Can anything be said against these new machines? Yes, something can. They make copyright infringement as easy as apple pie—but not necessarily as American.

Where does the individual stand now after the recent overhaul of the copyright law? I've read through updates from the Copyright Office. Long debate surrounded the law's drafting and still much remains to be resolved. The whole matrix of copyright standards and experience will continue to evolve. The thing is shod in Teflon®; copyright may never rest again.

Meantime, we have guidelines—general principles lacing through reports from the U.S. Senate, the House and CONTU (the National Commission on New Technological Use of Copyrighted Works).

One of the guiding doctrines is called "fair use." It limits exclusive rights to a copyrighted work, depending on purpose of use, nature of the work, amount and substantiality of portion used and *the effect of the use upon the potential market for or value of the work* (italics added). As publisher of a special-interest journal, I find the last factor quite important. Of course, "fair use" allows for brief quotations for criticism, comment, news reporting, teaching, scholarship and research. But for further uses the lines draw in more closely. An example is made of such specialized publications as newsletters, which a House report singled out as "particularly vulnerable to mass photocopying [which] may have a significant impact on the commercial market for the work."

Libraries, with their copiers, may allow patrons "isolated single spontaneous" copy privileges as "fair use." But libraries or research centers infringe if they copy systematically or for commercial advantage. The interlibrary loan menace is carefully circumscribed and it seems that anyone could stumble into error if he or she subscribed or purchased a copy of needed material and by photocopying made it available to readers who could otherwise represent multiple subscriptions or purchases.

Considering the implications of the laws and guidelines, one concludes that any case of deliberate copying to avoid subscription or purchase might be construed, in the case of a specialized publication, as substantial impairment of its market. Could that violate "fair use"? The committees don't spell out everything.

But the law does make violators liable for infringement penalties up to as much as \$50,000. "Innocent infringement" would be penalized less but not condoned.

What has all this to do with kiting and *Kite Lines*? Only that if a buyer of *Kite Lines* copies pages, even though in ignorance of the law and motivated by desire to help a friend, the result could be less income for *Kite Lines*. While any one instance may be relatively minor, it is the cumulative effect of many such instances that matters. If someone is interested enough to want copied portions of the journal in any substantial amount, he or she should be willing to pay the reasonable price.

With a limited-interest magazine, we can grow only to the limits of the interest. We don't yet know where that end will be. But we feel that those who love the sport will want to nurture its journal, recognizing their interdependence. We would not withhold from you the right to share *Kite Lines* as you see fit. But we encourage a sensitivity to those small responsibilities which have effect only as they accumulate and which result in the long-term viability of the magazine itself.

Giving credit where credit is due is another virtue we'd like to encourage. Too often, great kite designs are repeated, enjoyed and embellished upon while the name of the original inventor is lost. *Kite Lines* tries to be meticulous in this respect, but even here we have fallen short. I believe it's time and I propose that conscientious kilters reattach the *name* of the originator to each kite for which it's appropriate and in this way commemorate kiting's important inventors.

Some examples: Hargrave box, Bell tetrahedral kite, Eddy or Eddy-Malay (for

the tailless bowed kite), Eddy-type kite (for tailed), the Baden-Powell, Rogallo Flexikite, Jalbert Parafoil, Sauls Naval Barrage, Allison sled (for ventless sleds), Allison-Scott sled (for vented ones), Grauel Bullet, Thorburn Stacked Deltas, Bushell Trefoil—the list could go on for pages and I stop at random. (Forgive me, all others of equal merit!)

Though many kites were designed in antiquity and lack identification with an individual designer (as are many "ethnic" kites), we shouldn't let that prevent us from showing, where we can, honor to kiting's great names. We should correct *away* from anonymity and *toward* creditation. One who leaves a kite behind should be remembered in the sky—rather than on a headstone.

Giving credit where it's due can also apply to this magazine. From its pages we all learn (including this editor). It would be well for more of us to acknowledge a debt to our sources of information, even as *Kite Lines*, in turn, strives to recognize the kites, kilters and writers everywhere who have made the magazine what it is.

While we who publish *Kite Lines* are committed to continuing it in the service of kiting for as long as we can roll paper into a typewriter and whether it profits us personally or not, we realize that if the magazine is to outlast us it must pay someone to do it. We are therefore dedicated to achieving profitability. Profits also will enable us to improve and increase our services to kiting. Although no one is sharing our risk, everyone can share our success.

Already we're offering an extra service which you'll see on page 13, our new "Brief Guide to Safe and Sure Kiting." As you'll notice, it contains a broad and general introduction to kiting that has long been needed in answer to questions often posed by newcomers to the sport. It also reprints the Safety Code which first appeared in an earlier *Kite Lines* and which has been so well accepted by the kiting community. Here's an item we hope you *do* copy, in full, for wide distribution! Or ask us to supply you with extra copies.

But please, when you cozy up to that copying machine, just remember the best interests of the magazine and guard them as your own.

Windily yours,

Valerie

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Letters

A REALLY KEENE KITER

We have a kiteflying group here in Keene and fly every Sunday afternoon all year—yes, even in cold and snow.

I teach kitemaking for the city recreation department, for both children and adults. I work in the schools and with the handicapped on a weekly basis. My wife Helen and I did many kite shows and flying for nursing homes. It seemed to bring much enjoyment to them. Many would hold the lines after we got the kites up.

We would be pleased to have anyone coming this way to call us for a fly. Telephone (603) 352-9305.

Chester E. McMartin
Keene, NH

CALLING ALL COLOMBIANS

I honestly think *Kite Lines* covers ALL about kiting. I want to congratulate you for the great work and a well-designed magazine. Through it I have learned more about kites and the different people in-

volved with them in the world.

I am in the process of starting the first Colombian Kitefliers Club, since in order to have an association in Colombia at least three clubs are needed. Colombia, because of its geographical position, is, according to me, better than any other country in Latin America for kite contests, since most of the year is summer and the beloved *wind* is always around. For this reason also, Bogota is much better because it's located at 2,600 meters above sea level, and of course we have winds *through the year*. I know by experience, basically attending different kite contests, that there are a lot of fans here, but nobody has tried to put them together and I have made that my goal.

Remember that you have an *amigo* here!

Fidel Jaramillo V.
Bogota, Colombia

BRUMMITT APPRECIATED

I have read and reread and I expect will do so many times over the years. . . "The

Sky Is Big Enough for All of Us," by Wyatt Brummitt [Spring 1979 *Kite Lines*]. What a marvelous speech that was. I tend to use words like *excellent* and *marvelous* far too much, my friends tell me, but this time I use them consciously and deliberately, because I think, along with your Foreword to [Hiroi's] *Sculpting the Sky*, this particular piece is a minor classic in kite writing. I want to say a very sincere personal thank you to Wyatt Brummitt for those words and to you through *Kite Lines* for bringing it to us.

Clive C. O. Rawlinson
Chelmsford, Essex, England

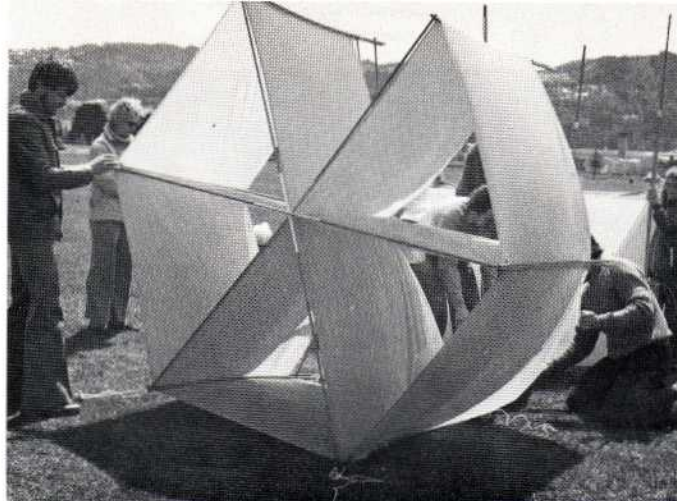
THE THRILL OF THE BEAST

Enclosed are photos of one of my kites. It's made from aluminum, 1/2-inch dia. wooden dowel, stainless steel and about 32 square meters of nylon woven fabric. Like a lot of my friends here, I find my biggest thrill is getting the beast erected and enjoying the company of people who come to watch. This kite flies well and is



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With the aid of his friends, Bruce Comfort assembles and flies his giant Hargrave-style box kite in Wellington, New Zealand.

very stable. The area shown is Wellington, which is a beautiful city but windy!

Bruce Comfort
Wellington, New Zealand

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MINIFOIL, vest pocket version of the "soft" kite, packed with line in its own drogue/pouch. Ideal for back-packers and sailors. Kite itself weighs less than an ounce, folds to 7" x 2", made of orange spinnaker cloth, line included **17.50**

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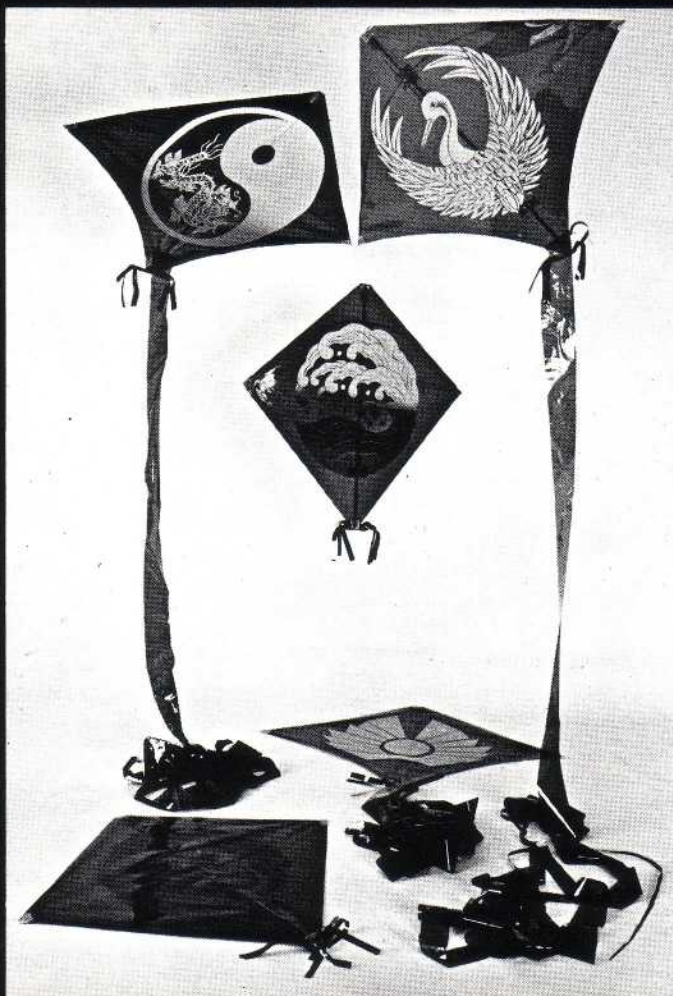
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What's New: Kites, Books, Sundries

Kites: Rotors

By Guy D. Aydlett

SATELLITE KITE

Manufactured by Satellite Kites, \$5.95 ppd., this kite was a near-bust. It flew, but just barely.

From a flier's viewpoint, Satellite Kite's flight aspect resembles a squatty cross, or mathematical plus-sign (+). Well-known to experimenting aficionados, the configuration is of the kind frequently named a Center Stabilizer (Disk) Rotor Kite. The lift-producing horizontal member, in plan-form, is an approximate 110 square-inch ellipse; its cross-section is more-or-less strained into a vestigial S-foil by means of an S-shaped slot symmetrically cut through the intersecting vertical stabilizer disk. Both components are die-cut from a leathery, resilient, plastic foam-flab material—an ideal substance for fabricating

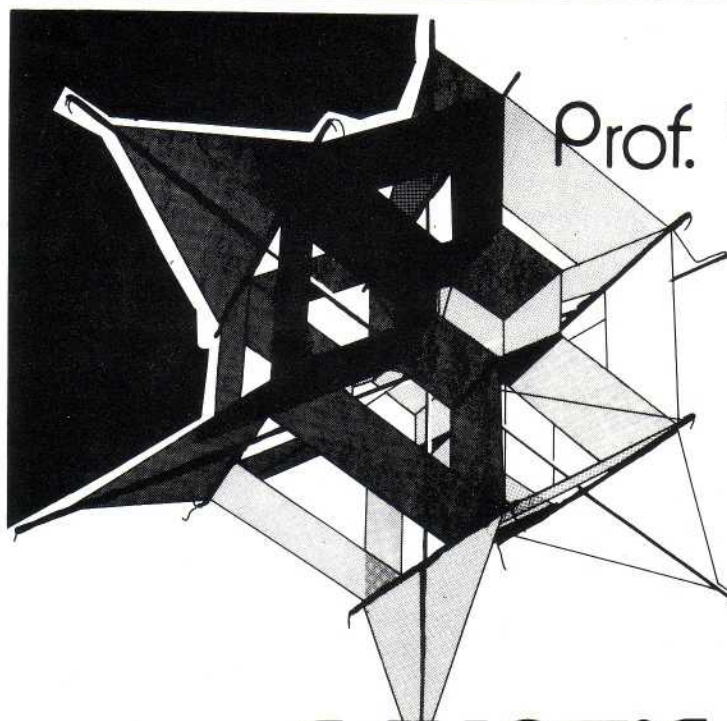
ersatz "flab-jacks." The resilience of this material precludes serious crash damage; unhappily, that very quality deprives the structure of vital rigidity—rigidity necessary to maintain in-flight alignment of the kite's working surfaces!

Satellite's bridle might be of passing interest to gadgeteers. It is a closed loop of monofilament that passes through the brass-bushed ends of the kite's transparent plastic axis-tube; in effect, the tensioned monofilament actually serves as the "axle" about which the kite rotates! It is hoped that the kite centers itself and reforms the loop into a triangular configuration—bridle-leg, kite-axis and bridle-leg. (Fliers who have owned samples of the presently defunct Rotoki may remember that they employed a similar self-adjusting bridle as a design feature.)

ROLL-O-KITE

This rotor kite, manufactured by RAFCO, about \$5.00 retail, flies tolerably well if certain precautions advocated by the maker are practiced; namely, reinforcing the structure with glue and tying a 15" square of cloth about 24" ahead of the bridle junction as a high-wind/rough-air "stabilizer."

As the flier sees it, the flight aspect of this kite resembles a squatty Roman capital H—another "film spool" rotor kite ("Patent Applied For"—for some arcane reason). The horizontal member (lifting component) utilizes the near-ubiquitous, moderately inefficient, thin S-foil cross-section. The vertical-plane members (endplates) are the usually-seen circular disks that enhance most horizontal-rotor



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What's New

...Continued

kites' directional stability and lift efficiency. These major components are of molded or die-cut plastic foam of the styrofoam kind—moderately dense and moderately rigid. Minor fittings and pivots are ingeniously-tooled, injection-molded thermoplastic material. Metal pivots would have been better. As is often the case with mass-produced kites, this one's performance is not up to the level of quality that a careful individual designer and maker normally realizes from his or her efforts.

However, I'd recommend Roll-O-Kite to anyone who'd like to get acquainted with the genre. Made to a larger scale—about 1.4 times larger—and provided with super-proportionally greater diameter endplates, an efficient fat-foil form, plus careful workmanship and balance, this kind of rotor kite is capable of outstanding performance—and it needn't have its clean design cluttered with flag or handkerchief stabilizers, either!

SAM DA VINCI'S UFO

Manufactured by Bargain Basement, \$6.00 ppd., the "Unconventional Flying Object" rotor kite utilizes conventional geometry common to the center-stabilizer kind; i.e., a more-or-less elliptical planform lifting-body which rotates about its horizontal or long axis and which incorporates with a centrally fixed stabilizer disk whose plane contains the short axis of the ellipse and is perpendicular to the long, rotational axis.

The sample UFO consisted mainly of two 1/2-mil membranes of tough, Estar®-type thermoplastic material cemented to perimeters or surrounds of formed translucent Imperial Eastman Nylo-Seal® tubing, 33-SN-3/16. The two major components were joined together at their common intersection by flexible transparent adhesive-tape hinges which permitted the kite to be collapsed and packed flat in an envelope for shipment. The only assembly operation required to prepare the UFO for flight was that of erecting the stabilizer disk perpendicular to the elliptical lifting body and securing the configuration with four "guide lines" (actually stays) which were slivers of peel-and-apply sticky tape.

Experienced users of rotor kite airfoils of high efficiency may well wonder why the essentially flat tympanous pellicle airfoil of the UFO can be expected to autorotate and subsequently enjoy lift from Magnus forces. The fact that a flat airfoil is indeed capable of rotating in a fair wind and therefore can enjoy lift forces, albeit inefficiently, deserves brief discussion uninhibited by sesquipedalian, scholarly analysis of the phenomenon. Colorfully, capriciously and with good cause we may call it "The Bull-roarer Effect."

Fliers younger than 60 may not remember that, too many generations ago, bull-roarers were current as popular, simple, home-made toys. A proper, functional bull-roarer consisted of little more than a long, thin slat of wood—often purloined from an opportune shutter or window blind—to which a length of string was tied through a small hole bored near one end. The child's duty-and-pleasure was to whirl the slat rapidly in a horizontal circle-plane above his or her head. As the whirling commenced, magic happened:



Fliers younger than 60 may not remember that, too many generations ago, bull-roarers were current as popular, simple, home-made toys. A proper, functional bull-roarer consisted of little more than a long, thin slat of wood—often purloined from an opportune shutter or window blind—to which a length of string was tied through a small hole bored near one end. The child's duty-and-pleasure was to whirl the slat rapidly in a horizontal circle-plane above his or her head. As the whirling commenced, magic happened:

the slat acquired rapid rotation about its long (string) axis and emitted a most gratifying, satisfying, fluttery roar of a magnitude guaranteed to prod prostrate parents from their postprandial pallets!

More magic: As the slat assumed respectably high rotational velocity, noticeable Magnus forces came into play; prevailed over resistant centrifugal force; and the nearly plane, circular path initially taken by the slat and its string evolved into one of two possible conical path-envelopes: base-up position—slat high; or base-down position—slat low. Either position was determined by the rotational sense of the slat.

Since the sophistications of swivels seldom were savored in the Olden Days, guess what happened? You are right. After being twisted many turns, the string stored up sufficient torque energy to revolt (if it didn't break); it overcame original rotational inertias and obliged the slat to rotate a while in the opposite sense. As a consequence, the bull-roarer slat alternately cycled in high-low-high-low paths. These oscillations continued as long as youthful energy and exuberance persisted.

END OF DIGRESSION

We resume discussion of the UFO. The bridle is the usual V-shape; about 31 inches on each branch; heavy monofilament with a knotted loop-bight at the junction; each branch extremity is tied to one hole in a two-holer shirt button (!); the remaining hole in each button serves as a pivot bearing. Other pedestrian items are: truncated dressmaker pins as pivots; pherical plastic beads as friction-reducing pivot spacers.

Originally, the kite's mass imbalance or vestigial geometrical unsymmetry caused it to fly in a wing-low attitude. The condition was corrected by shortening the bridle branch attached to the lowside pivot.

This rotor kite has no "top" or "bottom" as do its brothers which sport curved asymmetric airfoils. Therefore, on any given flight attempt, the current "up" side should move in rotation away from the flier, or downwind. One would think that the kite at random would commence rotation in either sense when committed to ample ambient airflow—fifty-fifty, heads or tails. However, the UFO Trolls must have stacked the deck: the test-kite preferred to commence turning in the desired sense four times out of five!

Simple but ample instructions packed with the kite included a phrase that some of us elder fliers may consider to be evil advice: "To fly, stand with your back to

DATA CHART

	Dimensions	Weight	Materials	P	AT	ED	EWV	AF	SL
Satellite Kite	disk, 13" dia. airfoil, 7x23"*	2.15 oz.	soft plastic foam	G	1 min.	G	5-15	15-25°	S
Roll-O-Kite	disks, 7 3/8" dia. airfoil, 4 7/8 x 16"***	2.13 oz.	semi-rigid plastic foam	F	5 min.	G	5-20	35-55°	I
UFO	disk, 9 1/2" dia. airfoil, 6x12"*	0.66 oz.	plastic film and tubing	F	6 min.	F	10-20	30°	I

*ellipse **rectangle

Code: P=Portability; AT=Assembly Time (on field); ED=Est. Durability; EWV=Est. Wind Velocity (min.-max. mph); AF=Angle of Flight; SL=Skill Level: N=Novice, I=Intermediate, S=Skilled

Ratings: P=Poor, F=Fair, G=Good, VG=Very Good, E=Excellent

KITING, we call it now—the serious, involving adult art, science and sport of flying and making kites. It is something of a trend, one that started in the 70s and with the 80s is expected to continue to grow in variety and fascination. People are recognizing the values of kiting as a creative challenge for all ages, as fresh as all outdoors, free of pollution and nonconsuming of energy.

The lore of the kite begins with its origin in China's Han Dynasty and continues with its role as the ancestor of the airplane. Kites have been used to ward off evil, deliver love messages, raise banners, drop propaganda leaflets, catch fish, spy on enemies, send radio signals, measure the weather, photograph the earth, tow vehicles, advertise politicians and lift passengers into the sky. Kiting's cultural diversity is reflected in the varied traditions and designs that characterize kites in different nations. For example, in India and Thailand, kiting is akin to a national sport.

Today in every state in the Union and at least 40 other countries, growing numbers of impassioned adults fly kites almost every week of the year. Over 100 U.S. kite shops cater to the enthusiasm, and an equal number of kite festivals are drawing crowds annually in towns and cities—a noted example being Washington, DC, with its Smithsonian Kite Carnival. Here the skies are filled with a United Nations of kites, what *Time* magazine called a "sociocultural anthology of man's immemorial urge to fly." Though kites are easy to make or buy, they are only superficially trivial. Kite curricula are appearing on the university level—while about 40 kite clubs are thriving around the world, linked by their own quarterly journal, *Kite Lines*. Together these influences are bringing kite civilization to remote areas—Indiana farmland, urban open space, suburb, wilderness, shopping center. To fly a kite is to risk addiction.

when to fly

There's a certain kind of day that gives a kiter a case of kite finger itch. That's when the trees are a-jiggle against a clean blue sky, flecked at times by clouds on

a brief guide to safe and sure KITING



the move. It might be a day in early spring. Or it could just as well be summer, fall or winter. Kites know no season. The stereotyping of kiting as a springtime thing is on its way out. A kiter picks a *day*, not a season. Patterns of weather vary with geography, so it is well to become familiar with your area's weather. Recognize, too, that there's such a thing as *too much* wind. Depending on your kite, typical good-flying weather provides steady winds in a range of 4-18 miles per hour (*not* when trees start swaying).

Seize the day. Enjoy the spontaneous appeal of kites. But exercise some caution. People have been killed flying kites, but only from real foolishness. Keep safety in mind. In the U.S., the Federal Aviation Administration has a single regulation governing kites under five pounds in weight:

No person may operate a kite in a manner that creates a hazard to persons, property or other aircraft.

To make this general regulation specific, *Kite Lines* has recommended the following safety code. While the code is not all-inclusive, it's a recognized basic guide for individual kiteflying.

The KITE LINES Safety Code

The Four Nevers of Kiteflying

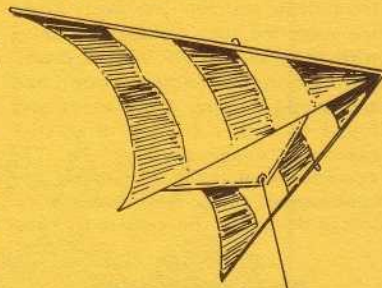
1. Never fly a kite in wet or stormy weather, and keep your line dry.
2. Never fly a kite near electric power lines, transmission towers or antennas.
3. Never fly a kite with wire or anything metallic in its line.
4. Never fly a hard-pulling kite without wearing gloves.

Five Things to Avoid while Kiteflying

1. Public streets and highways—don't fly in or near them.
2. Air traffic patterns.
3. Bystanders in your kite's line of attack—especially when flying maneuverable kites.
4. Rocky, bumpy or obstacle-filled fields—they can trip you up.
5. Trees—but if you do lose a kite to a kite-eating tree, loosen the line and let the wind fly it out.

where to fly

Some fliers will spend considerable time traveling to reach a favorite kiting spot. Beaches are an example, because of their steady winds. As with shores along most bodies of water, they usually enjoy good air flow. Wide open hillsides (on the windward side) are ideal. But anywhere that you can find a few clear acres may serve you well. Schoolyards, parks and farmlands are likely candidates. Less obvious are old abandoned airfields, rooftops and parking lots on Sunday afternoons.



what to fly

In these times, it's a great comfort that kites can still be had for under a dollar. Kiting thus is still one of the most accessible of sports. But also a pleasure is the fact that kites are available in ever-increasing variety and quality. The sport thrives on having no standardized rules or equipment. Once of paper, leaves or silk, kites today are usually made of space-age plastics such as Mylar® or Tyvek®, or of durable synthetic fabrics, notably rip-stop nylon (also known as spinnaker cloth). Fiberglass rod spars may take the place of wooden sticks now. Line is apt to be tough braided nylon or polyester, up to 100-lb. test or stronger. Sophisticated kite reels come in a wide selection. And although you can spend over \$1000 on a kite, most are still under \$10, remarkably modest compared to skiing regalia, a golf club membership or a sailboat. Durable kites are recognized as a good investment in high-value family recreation. Often handcrafted in stunning

KITE FRIENDS—WE DID THIS FOR YOU!

Above is our *Brief Guide to Safe and Sure Kiting*, created for *you* to use.

Clip it out—hang it up—spread it around—reproduce it in full! We designed it to help you answer many of the questions people ask about kiting. It's also intended to work as an inexpensive educational handout for workshops, fliers, festivals, courses and such.

The *Guide* includes the *Kite Lines* Safety Code, which has been well accepted for use by individual

fliers. We believe that we who promote the sport of kiting have a responsibility to promulgate safe flying practices.

Note: if you wish to copy the *Guide*, please do so in full. Partial uses require advance written permission, but reprints in full do not require it.

Have we extra copies? You betcha. They're free for a self-addressed stamped envelope. For bulk quantities, ask for rates: *Kite Lines*, 7106 Campfield Rd., Baltimore, MD 21207, USA. Or call: (301) 484-6287. ♦



designs, today's kites are an art form, fit for a gallery. But they hang best in the sky. In getting started, your only problem may be deciding on a kite. It's impossible to recommend one type of kite over another, since each has its own personality. Discovering them will be your private delight.

to build or to buy

Another option open to the avid kiter is making your own kite. You may first become enraptured by commercial models. In fact, few kites are weaned from them entirely. But many kites are soon led into making something with their own hands. There's special gratification in building one's own bird and setting it flying. Many artists have found in kites a medium of creative expression unlike anything else. The expenditure of hours of planning and construction can be more than equivalent to the cost of the ready-to-fly kites.

getting ready

Most kites on today's market require minimum assembly and are very easy to fly. But it can prevent problems if you check out your kite before flying it. Look first for balance and proper bridling. A well-balanced kite will be evenly weighted side-to-side, will have a symmetrical shape and frame, and when suspended from its towing point will rock gently and find a balance rather than flip all the way to one side. A kite's bridle should position the kite's leading edge about 15 degrees higher than its trailing edge when suspended from its towing point.

The bridle is the first point of correction to check on an ill-behaving kite. Two of the most common bridling defects are unequal leg lengths and a too-short bridle. In a light wind, you may want to increase the angle of attack with a lower bridle; in strong wind, you can spill more air with a higher towing hitch. A little experi-

mentation will help you find optimum bridle settings. Take to the field—with your kite—repair materials and (if you're flying a flat kite or a touchy bowed one) tails, such as crepe paper streamers or rags. Many a cranky kite settles down with a tail as a baby does with a security blanket. See that your line is wound on some kind of reel or winder. Even a tin can is far better for line handling than a fumble-thumbs ball of string. Beware the new ball when you reach the end of the line, which is rarely tied to the core!

how to fly

Now prepare to launch. For most kites, have a friend walk your kite out about 100 feet from you. The wind will be at your back and in the face of your helper and your kite. Have your friend hold the kite lightly by the center sticks. If there is a tail on the kite, extend it fully on the ground in front of the kite. When you're ready and you feel the

wind is right, signal or call to your assistant for release while you hold the line taut—and watch the kite rise! You won't have to run. Just keep tension on the line and let it out smoothly and fast enough for the kite to gain altitude. "Pumping" the line spurs lift if the wind is sluggish. Once the kite is up above the ground turbulence, it will usually settle nicely into the steady upper breezes.

If you encounter a no-wind situation, your alternatives are these: (1) use a lighter kite; (2) make a "high-start" launch, one even further from your assistant, such as 200 to 500 feet; (3) accept the conditions with grace: there will be another day.

As you practice launching, you'll soon learn ways to do it without a helper, working your kite right off your hand and into the sky. (Of course, very large kites always require help. In Japan, whole teams of 100 people fly gigantic 48 x 36-foot kites on ropes 1½ inches thick.) You'll also learn how to handle line and how to land a kite, slackening the line so the kite doesn't crash, or "walking down" the kite, letting a friend reel in while you walk toward the kite with the line under your arm.

As your kite flies, keep an eye on it. Some kites are so stable they can be tied off and left untended. But other kites, less predictable, may need observation.

There's a difference of opinion on the subject of altitude. Some want their kites far out, to the point of invisibility; others want to see and manipulate their kites.

Proficiency in kiting is largely a matter of experience. That holds true especially for maneuverable kites—fighters (one-line maneuverables) and stunts (dual-line controlled). These kites are the sport's new wave, dancing through the sky. Tournaments to pit skills are on the increase in the U.S., and include patterned measures of execution for stunt kites. "Figure kiting" includes hedge-hopping, diving, figure eights and more, as well as free-style, poetically performed to music. One caution: maneuverables must be handled with respect because they are space-consuming and people-threatening as they swoop over terrain; i.e., they are not to be flown on crowded beaches.

for more about kites

New enthusiasts can hasten their immersion in the sport through reading. Many kites recommend *Kites*, by Wyatt Brummitt (Golden Guide series), a buy at \$1.95. Top choice for a comprehensive book is *The Penguin Book of Kites* by David Pelham at \$4.95, still available in many stores. Three other good texts (each \$4.95) are Hiroi's *Kites: Sculpting the Sky*, Newmans' *Kite Craft* and Yolen's *Complete Book of Kites and Kite Flying*. An art book about kites is sculptor Tal Streeter's *The Art of the Japanese Kite*, \$17.50.

To become an all-out member of the kiting family, the quarterly journal *Kite Lines* is indispensable at \$9.00 a year. It contains national and international news of kiting events, construction plans and techniques, profiles of kites, kite and book reviews, in-depth feature articles—and some very interesting advertising. New subscriptions start with the *Kite Lines Annotated Kite Bibliography*, which lists and evaluates nearly every book in print on the subject of kites. *Kite Lines* reflects and nurtures the growing worldwide community of kite enthusiasts. It is located at 7106 Campfield Road, Baltimore, Maryland 21207, USA.

Kite Lines recently expressed some philosophy that kites are repeating:

Kites make the world
seem smaller
and the sky
seem bigger.

May you find this secret and many others for yourself as you explore this ancient pastime and modern sport. ◇

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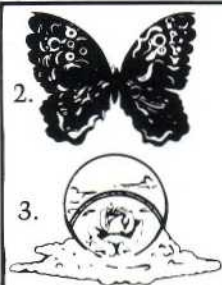
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PATENT PENDING



What's New ...Continued

the wind and walk *backwards*." (Italics mine—GDA.)

Because of its small size (12-inch span and 9½-inch diameter), it would seem to

be efficacious to reverse the kite's membrane coverings; that is, apply the aluminumized material to the airfoil and the transparent material to the disk. The resulting light-blink would make the vehicle more visible to the flier.

UFO flies—not too efficiently, but fairly stably. For anyone who has not yet flown a rotor kite and is willing to shuck out the asking price, UFO can be an interesting introduction to the Magnus forces phenomenon and, yes, to The Bull-roarer Effect.

Books

By Valerie Govig

BEAUTIFUL SINNER

Kites and Kite Flying, by Ambrose Lloyd and Nicolette Thomas (Hamlyn, distributed by A & W Publishers, Inc., 95 Madison Ave., New York, NY 10016; 1978), 96 pages, \$6.98 (+ 75¢ postage & handling).

Big and beautiful, full of color and bargain priced, this looks like a great book. Unfortunately, it's disappointing.

The pages in *Kites and Kite Flying* are 9 x 12½ inches, the largest of any kite book in print. And this plus the fact that full color pictures are lavished on 44 of the pages is justification enough for most book buyers. Which is fortunate for the publishers, since the writing has all the spark and authority of hired space-filling.

Why another abbreviated retelling of kite history? The more times Clive Hart's*

*Clive Hart, *Kites: An Historical Survey* (New York: Praeger, 1967), p. 32.

work is "researched," the more it's degraded. For example, the theory of the "spread" of kites from China through the orient and Oceania and eventually to the West is here accepted as fact, although it's only Hart's speculation. (It's an interesting one. I'd like to see an anthropologist make a study of kites as an example of culture spread.)

Why another pass through world kite customs? And if we must so pass, why is kite fighting barely discussed? (It is mentioned under *Japan* and *Korea*; *India* is ignored in this book.)

Like most kite books, this one turns up a few good items, such as an amusing adventure told by Baden-Powell. But the errors are abundant, beginning with the misspelling of some important kite names, continuing with misidentification of pictured kites (a Flexifoil Eurostack is called "a parafoil") and cresting with the garbled section on "How Kites Fly." Glaring gaps are reels and the current kite scene. There is a bibliography of nine books, a scrambled, out-of-date list of kite associations and no index. Instructions for making six kites are included. I will say the drawings are very neat and clear. While the book may aim to delight rather than enlighten, one wonders if so much inaccuracy is a necessary corollary to that purpose.

The layout of *Kites and Kite Flying* is handsome enough to disguise not only the textual weaknesses but illustrative shortcomings as well. It is inexplicable that some of the kite choices received

two-page spread treatment. Nor does the quality of the photography in every case withstand the enlargement; some of the pictures are overblown in both senses of the word.

By contrast, some scenes are full of exciting content, but they are monstrously undercaptioned: the *kitefliers* in them are unidentified. I cry out—Who are you, gentleman with the large bird kite, young man bridling the huge pink Cody, studious fellow next to a white Conyne twice your height? *The reader ought to know*. But more than that, the authors' worst sin is their failure to credit the people to whom the book owes so much of its value. ♦

Ben might have called them



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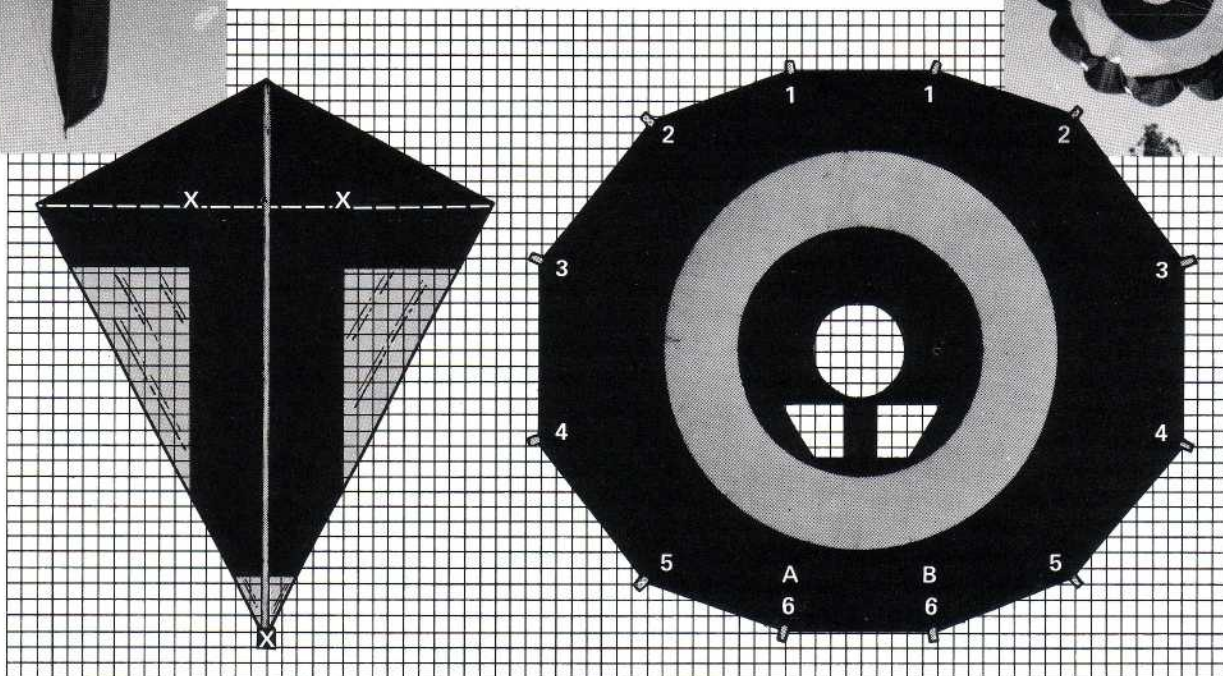
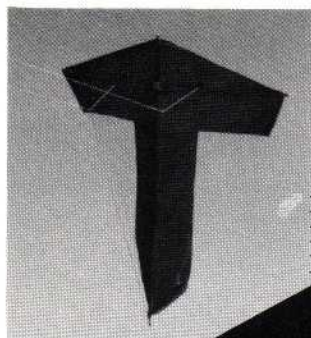
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COMPANION KITES FOR FUN AND GAMES: THE SHOOTING ARROW AND THE BULL'S-EYE TARGET



one block = one inch

By Ed Grauel

It seems the hottest thing in kiting today is the two-line control kite. It comes in several shapes and sizes for flying in various quantities and combinations. Actually, almost any type of kite can be converted into a satisfactory dual-line controllable. On-the-air kites (such as flat, bowed, keeled, box, parawing) are usually quite sensitive to the control lines and require some training or practice to stunt them properly. Against-the-air kites (such as parafoil, sled, rotor) are generally more forgiving under control, but look pretty much the same in the air whether flying sideways, right-side-up or upside down.

You can achieve the happy combination of a readily recognizable stunting kite with ease of control by use of a bowed kite in the form of an arrow—which always points in the direction it is going! Then you can combine it with a target kite at which to shoot.

THE SHOOTING ARROW

The arrow itself is cut out in solid-colored fabric, paper or plastic and the rest of the kite is clear vinyl, which is usually invisible from a few feet below. The design is not difficult except for the problem of cutting out pieces which have to fit and be attached to each other. This means you should allow about four hours to complete the job.

MATERIALS

- A 30x36" piece of plastic, Tyvek® or fabric.
- A piece of clear vinyl 8x17" or 11x14". Examples are Plastiglass, Clopane or Flex-O-Glass, obtainable at larger building and supply stores.
- Three ¼"-dia. dowels, one 36" long, one 30" long and the third 6½" long.
- Two 3' lengths of flexible tubing with ¼" inside dimension.
- Four eyelets.
- One small screw eye.
- A 6' length of cord suitable for bridling.

TOOLS

In addition to scissors, ruler, marking pencil and glue, a quarter-inch drill and

an eyelet punch are needed. A sewing machine is optional.

INSTRUCTIONS

1. Start by cutting out an arrow shape 36" high by 30" wide, as shown in the drawing. If the angles prove difficult, try cutting the kite in diamond shape along the dotted lines, then cut away the transparent areas. If the kite is to be made in fabric and sewn, add provision for a 1¼" space vertically in the center of the kite for a pocket to hold a ¼"-dia. dowel, 36" long, as a center mast. If the material you are using requires hems to prevent raveling, add a half-inch at the top and on the sides for hemming. In a pocket, the mast will have to be tied in by drilling an ⅛" hole near the top and bottom of the dowel, and a cord pulled through the fabric and the mast with a needle, and then tied.
2. Using a clear vinyl, cut out two half-rectangular sections to go on the sides and one triangular area for the bottom of the kite. As shown in the drawings, ½" spaces are provided to allow overlapping of the body of the kite, either by sewing or by suitable adhesion.
3. A ¼" dia. dowel, 30" long, is used as a spreader. It may be fitted with curtain

hooks at each end to be inserted into eyelets on the kite, or pockets may be sewn at the horizontal extremities of the kite to accept the dowel.

4. To install the double bridle, first insert a small screw eye in the lower end of the center mast, as shown by the lower X in the drawing. Then put eyelets or grommets at the two points shown by the upper X's. The two bridle lines go through these eyelets and are tied to a small piece of doweling on the back of the kite to prevent the lines' pulling through. The lower ends of the bridles are tied to the screw eye at the bottom of the center mast. Small rings may be placed on the bridles, down from the top about one-fifth of the total length of the bridles, to tie on the flying line.

5. Since the lateral stability of this kite is obtained by bowing, either a customary bow string may be tied to each end of the spreader or a 3" piece of flexible plastic tubing can be slit half-way through in the center, bent half-way over and slipped on the center mast where the spreader crosses it. A similar piece of tubing is inserted at the center of the spreader, then a piece of 1/4" dia. dowel, 6 1/2" long, is placed in the open ends of the tubing to achieve a bowing effect. If a pocket is sewn for the mast, it will be necessary to cut a 1" opening in the pocket to allow the dowel to be inserted in the tubing. An alternative to tubing would be a small hardwood block drilled to slip on the center mast, with another drilled hole to hold the 6 1/2" dowel inserted between the mast and the spreader.

FLYING

You now have a controllable Shooting Arrow kite, which should do well in any wind between 5 and 30 miles per hour. It can be scaled upwards without difficulty, but I find bowed kites usually do not do well in sizes smaller than 36" high.

THE BULL'S-EYE TARGET KITE

After you've practiced with the two-line Shooting Arrow kite (so that it will go where you want it to, when you want it to), you may be ready for the counterpart, a target to shoot at. This can be in the form of a circular parachute kite in rings of contrasting color, such as red and white, to simulate a bull's-eye target. Parachute kites need to be made in nonraveling fabric because plastic stretches out of shape and nontearing paper doesn't take color well.

No special tools are required to make a parachute kite, but the time and care needed to cut out the sections and to

measure and install the shroud lines puts the kite in the moderately difficult class and requires four or five hours to make.

MATERIALS

- A piece of material 36x42 1/2" in a color of your choice (I used red).
- A piece of material 27x27" in a contrasting color (I used white).
- Twelve 1/4"-wide pieces of ribbon 3" long for use as tabs to attach shroud lines.
- Two 1/2-ounce weights (obtainable where curtains and draperies are sold).
- About 20 feet of braided or woven cord for shroud lines.

INSTRUCTIONS

1. First, cut out the red fabric in the 36x42 1/2" oval shape, as shown in the diagram. Then, working from the center point, inscribe three circles at 3", 8" and 13". The center circle at 3" is cut out, and also the circle between the 8" and 13" marks. This is where the white circle is sewn between the two red areas.
2. Establish a center point on the white fabric and inscribe four circles at 7 1/2", 8", 13" and 13 1/2". Cut out at the 7 1/2" and 13 1/2" marks.
3. Sew the white section to the two red sections as close to the 8" and 13" marks as possible. Sew the overlapping 1/2" areas at the 7 1/2" and 13 1/2" marks.
4. Cut out two 3 1/4x4 1/2x6 1/2" trapezoid vents in the white section, as shown in the drawing.
5. Sew 12 tabs at the points numbered from number 1 to number 6, and the two half-ounce weights at A and B, shown in the drawing.
6. Cut six 3' pieces from the woven or braided cord, for use as shroud lines. Shroud lines are tied from tab 1 to tab 1, tab 2 to tab 2, and so on. An overhand knot is tied at the center of each shroud and care must be taken to make the measurements exact. Even an 1/8-inch variation will cause the kite to lean in one direction or the other. The length of the shroud lines from the knot at the center to the tabs should be:

#1 to #1	31 1/2"	#4 to #4	30 1/2"
#2 to #2	33"	#5 to #5	34 1/2"
#3 to #3	30 1/2"	#6 to #6	34 1/2"

The six shroud lines are linked together through the center knots with a cord to be attached to the flying line.

The parachute bull's-eye kite will fly in winds from about 6 to 16 miles per hour. It can be tied down and the Shooting Arrow kite aimed at it from any direction. It makes a spectacular demonstration. Observers won't believe their eyes! ◇

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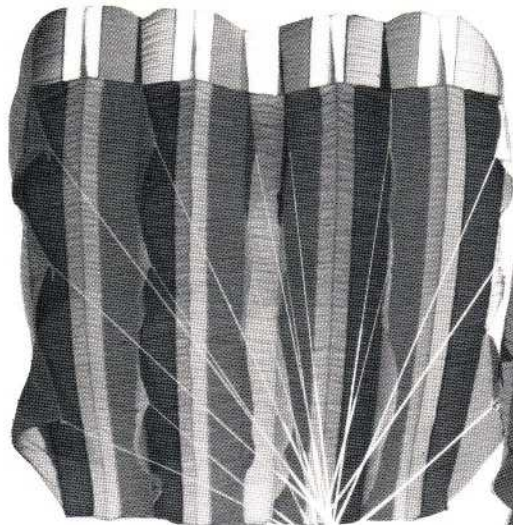
George Ham's Parafoils

Story and Photographs
by Martin Payne Dowling

Alcatraz is vanishing in the fog as the wind on San Francisco Bay makes the kite lines whistle.

"I've never seen a kite like that!"

"It's a patented Jalbert Parafoil. It doesn't have sticks."



"What is it made of?"

"Rip-stop nylon. I'll pull it down and show it to you." The collapse of inflated cloth is followed by close inspection.

"I can make a kite like that!"

Three years ago at the Marina Green on the San Francisco waterfront, George "Big Jade" Ham returned to his car and began his new hobby—kiting.

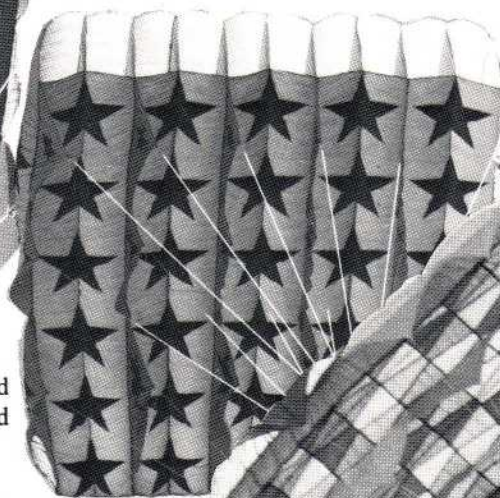
George, a native of Nebraska and a California resident since 1940, acquired the name "Big Jade" from his long association with rock and gem collections specializing in large pieces of Wyoming jade. It remains unclear whether the

MARTY DOWLING is a Montana native and geologist turned California attorney. In his words, he is "single, photographer, cross country skier, beer guzzler, traveler (Europe, Egypt, Iran, Turkey, where next?), and incidentally kiteflier."

term "Big" was originally applied to George's jewelry or his ample physique!

Within a week of George's introduction to the Parafoil, he reappeared at the Marina Green with his own version. He is one of those rare males who has training in sewing machines, so it was a simple matter to use one of his three sewing machines, pick the proper material and proper needle and sew away! While the sewing machine was simple, designing a Parafoil that flew was another matter entirely! "I think I'm having a little trouble with this Parafoil."

Round and round went the collection



of cloth cells, looking more like very large sausage than a Parafoil. There was obviously room for improvement—and improvement did follow. With an appreciation for the close tolerances in preparing the cloth and the ability to precisely sew the cells and rig the kite, George's kites showed marked improvement in flight and stability after a few months of testing and study. The skill that he developed on his jade jewelry showed itself in the care with which he produced his "gems" of the air.

As George does not own a television set, he devoted much time to design experiments and his productivity increased. In only a few short years, George has designed and created a collection of 15 Parafoils. George's designs are varied and at times sensational. His collection includes a "skull and crossbones" black Parafoil, a multicolored "Grandma Quilt," the "Slim Jim" (2 x 7 feet) and the matching "Twice as Wide" (4 x 7 feet). At the extremes in size are George's constructions of a colossal 50 square foot all-blue Parafoil with 50 large red stars and the "Baby," a 1½-square-foot Parafoil.

The "superstar" of the collection and the one which draws the most attention is the "American Flag" Parafoil (6 x 10 feet) which is proudly flown each weekend at the Marina Green.

George Ham hauls in all 26 square feet of his Parafoil, sewn in sections for a stained-glass window effect. Behind it is his "50 Stars" and last, to the left, is "Twice as Wide."

Opposite page, George flies his American Flag Parafoil; (inset) George and Marion, Parafoil team.



Par Excellence

George conceived the design idea for this model after seeing an American flag flown on the line below another kite. Thus began the complicated job of preparing patterns, obtaining the necessary colored nylon, cutting the stars required for such a large kite and sewing the colored stripes cutting horizontally across each Parafoil cell.

George estimates that the planning, design consultation, sewing and rigging of the American Flag kite consumed at least 250 hours, an overwhelming task made worthwhile by the sensational results. It is a wonder at the end of 200 feet of line.

Marion, his wife, encourages, aids and abets him. She helps him launch his creations, untangles lines and does yeoman service in "walking down" the kites before George is pulled away by the San Francisco Bay winds. She serves as an information source for spectators' questions and fills the picnic lunch basket on good flying days.

It is necessary to note that Domina Jalbert, the inventor and patent-holder of the Parafoil design, has been of considerable assistance and guidance. When George was first experimenting with these designs, a friend suggested that the inventor was the kind of person who would be interested, helpful and encouraging. It was found to be true, and beyond that Jalbert offered useful comments and suggestions via constant correspondence and not infrequent telephone calls which have resulted in a close and enthusiastic relationship between inventor and experimenter. With this encouragement, George continues to turn out Parafoils for his own use.

In the future, George indicates that he will be working on some new shapes and designs for patterns to be new "gems" in the sky over the Marina. It seems that about once each month, George teases the imagination of other kitefliers with hints of a "new idea" in Parafoils. "Big Jade" George Ham hopes to keep the air filled with kites for many years to come. ◇



Empty Spaces in the Sky...

ALLISON'S DEATH LEARNED

Kite Lines learned only recently of the death of William M. Allison on March 22, 1978, at age 62, of a stroke, in Dayton, Ohio, where he had lived all his life.

Allison led a quiet life, lit by hope for his inventions and pride in the kite patent he applied for on September 8, 1950, and was awarded over five years later on March 6, 1956. Allison was the inventor of the kite popularly called the *sled*, which he himself named the *polymorphic kite*. He started designing it in the late 40s, finalized the prototype in 1962 and continued to work on it as late as 1977.

Legend has it that one of his kites broke loose one day and was recovered down the street by Frank Scott, who started making modified versions in earnest, to such an extent that the kite became known as the *Scott Sled*. As Allison's son, William (Terry) Allison, recounts the tale, "Frank Scott got it, cut

a hole out of it and made a very erratic kite out of a very stable kite." Scott succeeded in popularizing the kite but not the name Allison, which is still not as recognized as Rogallo or Jalbert.

Terry describes his father as a family man, employed in maintenance, who loved to invent things and was fascinated by "things that fly." He often flew kites with his four children in the neighborhood.

In a rare flicker of limelight, Allison appeared in a *Dayton Daily News* story in 1950, just after he had applied for his patent. But the article's focus was on the kite's having been tracked as the source for a UFO sighting. He received a measure of appreciation from kite enthusiasts when Ed Grauel wrote a story about him in the Fall 1974 issue of *Kite Tales* (predecessor of *Kite Lines*). Grauel pronounced that "Allison's place in the history of kiting is assured. He gave to the world one of the simplest, yet one of the finest all-around kites that anyone has evolved



WILLIAM M. ALLISON

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Those of us who have seen hundreds of smiles beam from the faces of fliers of sleds have hundreds of reasons to remember William M. Allison. V.G.

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Annual statement required by 39 U.S.C. 3685.

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A. Total no. copies printed (net press run)	5400	5500
B. Paid circulation		
1. Sales through dealers and carriers, street vendors and counter sales	1307	1250
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C. Total paid circulation (Sum of B1 and B2)	4747	4677
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E. Total distribution (sum of C and D)	4907	4842
F. Copies not distributed		
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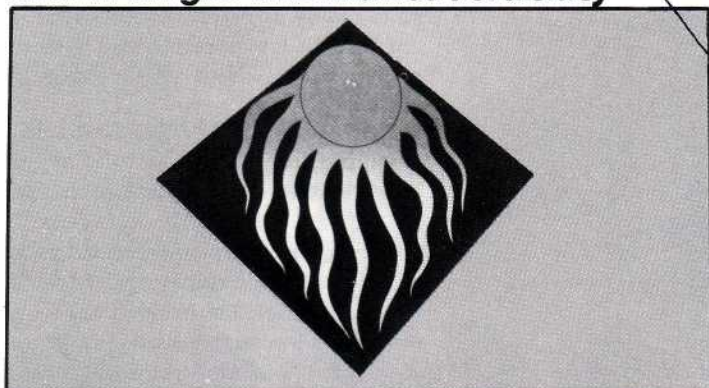
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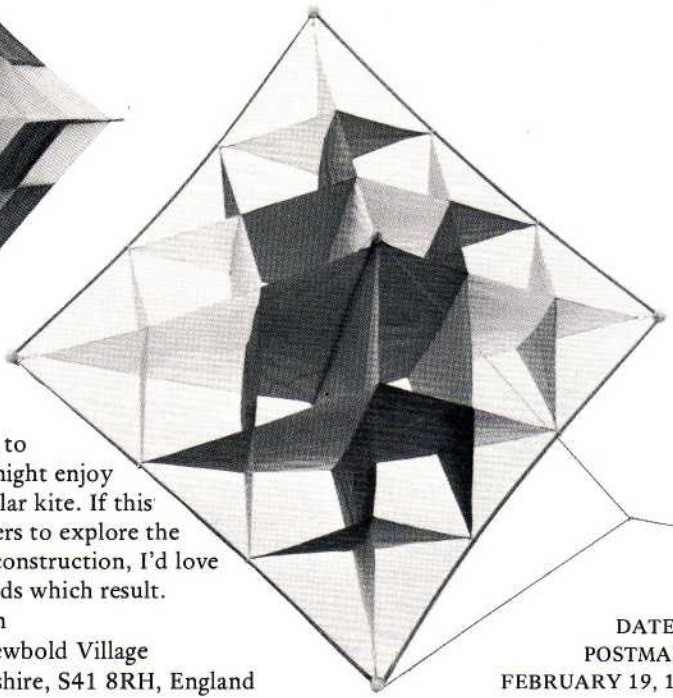
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Innovations: Facet Kite by Stephen J. Robinson



Sirs:
I was encouraged to forward my "Facet Kite" design to you so that others might enjoy flying this new cellular kite. If this kite encourages others to explore the possibilities of this construction, I'd love to hear of any hybrids which result.
Stephen J. Robinson
7 Hastings Close, Newbold Village
Chesterfield, Derbyshire, S41 8RH, England



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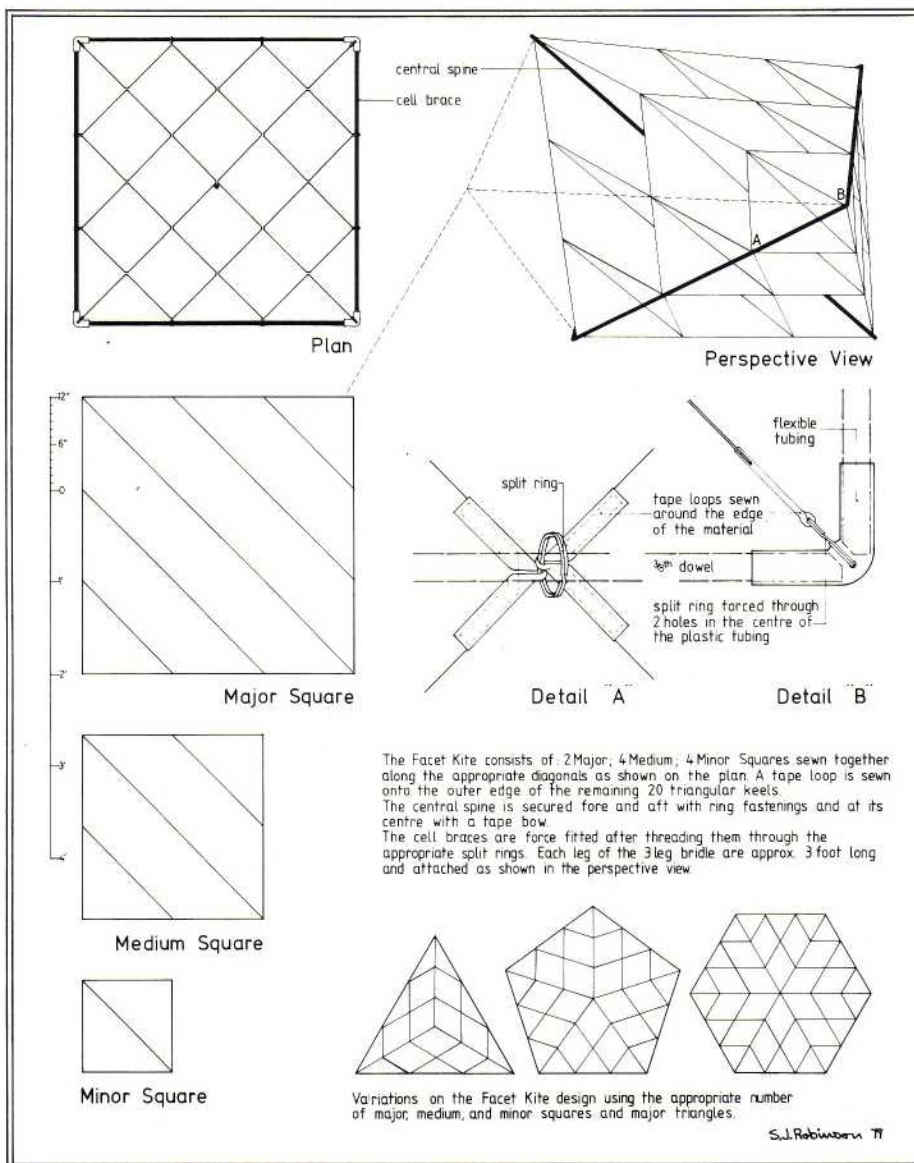
Comment by Curtis Marshall

Stephen Robinson's Facet Kite is of the same family as Peter Waldron's Prof. Waldorf design—but appears to lend itself more easily to the whims of the imaginative fabricator.

The Facet Kite, as presented by Robinson, is actually the basic approach to a whole series of applications—triangular, square, pentagonal, hexagonal, etc. After studying the plan, I decided to build the square version since it seemed the least time-consuming. The material was $\frac{3}{4}$ -ounce rip-stop nylon with $\frac{3}{4}$ -inch plastic curtain rings sewn in at each point instead of the split rings in the plan. For the corners, I used $\frac{3}{8}$ -inch-thick nylon disks drilled radially at 90 degrees. Lightweight $\frac{5}{16}$ -inch dia. dowels were used instead of the $\frac{3}{8}$ -inch dia. ones indicated. Assembly presented no problems.

The kite is not for light wind and should be looked upon as usable in moderate to high winds, probably 8 to 20 knots. It exhibits a surprising stability once there is sufficient breeze to keep it aloft. It flies at a low angle in a moderate breeze, but climbs to about 70 degrees with gusts of 12 to 15 knots. There is no "glide effect" and the kite drops suddenly as soon as the wind slacks off. Although performance is good with either a two- or three-leg bridle, the length of the bridle legs must be about equal and close to 36 inches each.

Successful extrapolation of the design would seem to require careful attention to the ratio of weight to wing area. It would be altogether too easy to become engrossed in the geometry and to forget that the cells must not become disproportionately small. This would increase not only weight but also drag while providing no increase in lift. Nonetheless, I think that it would be intriguing to try this kite design with a reduction of 4:1 as well as with an increase of 1:4. Size alterations of these magnitudes would probably offer some challenge and provide entertainment well into the wee small hours, not to mention consumption of calculator batteries. ♦



Submit your new ideas for a kite design or a construction method along with your name and address. These will be published in KITE LINES along with the date of postmark to document current developments as well as to imply originality. Address your suggestions to the Innovations Editor, c/o KITE LINES, 7106 Campfield Road, Baltimore, MD 21207, USA.

Curtis Marshall, M.D.
Innovations Editor

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The Great Contemporary Kites and their Inventors

By Tal Streeter

Until a scant 31 years ago, there have been only three generic, significantly distinctive mainstream kites: the flat kite, the bowed kite and the cellular or box kite. Lawrence Hargrave's box was the first uniquely western kite, a kite without precedent in all of history, one which had the added distinction of playing a paramount role in the development of the first airplane. It was, of course, the airplane which put a halt to kite development. As a consequence, the three basic kites seemed destined to remain forever the most perfect relationship between the wind and a tethered flying object that humankind would design.

But there were to be more kites. As pilot and fable-spinner Antoine de Saint-Exupery explained in Wind, Sand and Stars, "In anything at all, perfection is finally attained not when there is no longer anything to add but when there is no longer anything to take away. . . ." Remarkably it appeared that still more could be taken away from the spare kiteflying machine, to refine still further the very essence of an

object in tethered flight. First, in 1948, came Francis M. Rogallo's Flexikite and, in 1950, William M. Allison's sled, then, in 1967, Domina Jalbert's Parafoil. All were American designs. Most recently a contribution from England has earned equivalent rank in the opinion of many: the Flexifoil, created by Andrew Jones and Ray Merry.

*Each of the four new kites has markedly changed the character of contemporary kite forms and flying. Each has a loyal following as well as outspoken critics. (Kiting is definitely a partisan affair.) Are there now seven generic, significantly distinctive, mainstream kites?**

Fifteen hundred years ago, Ecclesiastes lamented the futility of life, the monotony of all things, the wind blowing in one direction, then the other, the activities of men: "...there is no new thing under the sun. Is there anything whereof it may be said, see, this is new?" In kites, perhaps yes. I began writing these articles with the intent of widening my own knowledge of these kites, which I greatly enjoyed, and the lives of their inventors. For my first essay, I choose the Englishmen.

ANDREW JONES, RAY MERRY AND THE FLEXIFOIL

A familiar sight in Europe's skies, Great Britain's speeding Flexifoil is still little known in the United States. Whereas speed has not generally been a consideration in typical kiteflying, the Flexifoil dares to break speed records. It further

challenges the normal sedentary nature of pleasure kiteflying by requiring strength and endurance of its fliers.

Advertising literature describes the "Flexifoil Skysail" much as I would, noting that it "has been called a 'flying mattress' by those who have seen it for the first time wheeling through the sky. It looks quite unlike any other kite. Six feet across, the Flexifoil pulls like a horse. Land yachters and skateboarders use them to provide traction, attaining speeds in excess of 20 miles per hour. A train of

Flexifoils has pulled a two-ton van uphill across grass. The production rip-stop nylon Flexifoil is controlled by twin 200-foot lines which run from the hand-held control bar to the kite. By turning the bar, the flier can make the kite loop, dive and hedgehop just inches above the ground. The name 'Flexifoil' derives from the flexing of the single fiberglass spar in the leading edge. This flexible spar enables the airfoil form to change its shape in flight and adjust to winds as light as 8 miles per hour and as strong as 50 miles per hour. This same adaptability coupled with the firmness of the spar allows the Flexifoil to accelerate to speeds in excess of 100 miles per hour. The sport of Flexifoiling is rapidly becoming a serious adult pursuit, including formation flying and stunt routines. A train of Flexifoils provides an unparalleled visual extravaganza sweeping across the skyline, lines screaming. Numerous applications for the world patented Flexifoil principle are being explored, including sailing, free flight and wind generators. *Warning:* Do not underestimate the power of the Flexifoil. Even one, in a strong wind, produces considerable lift, which makes it unsuitable for children under 12 years of age."

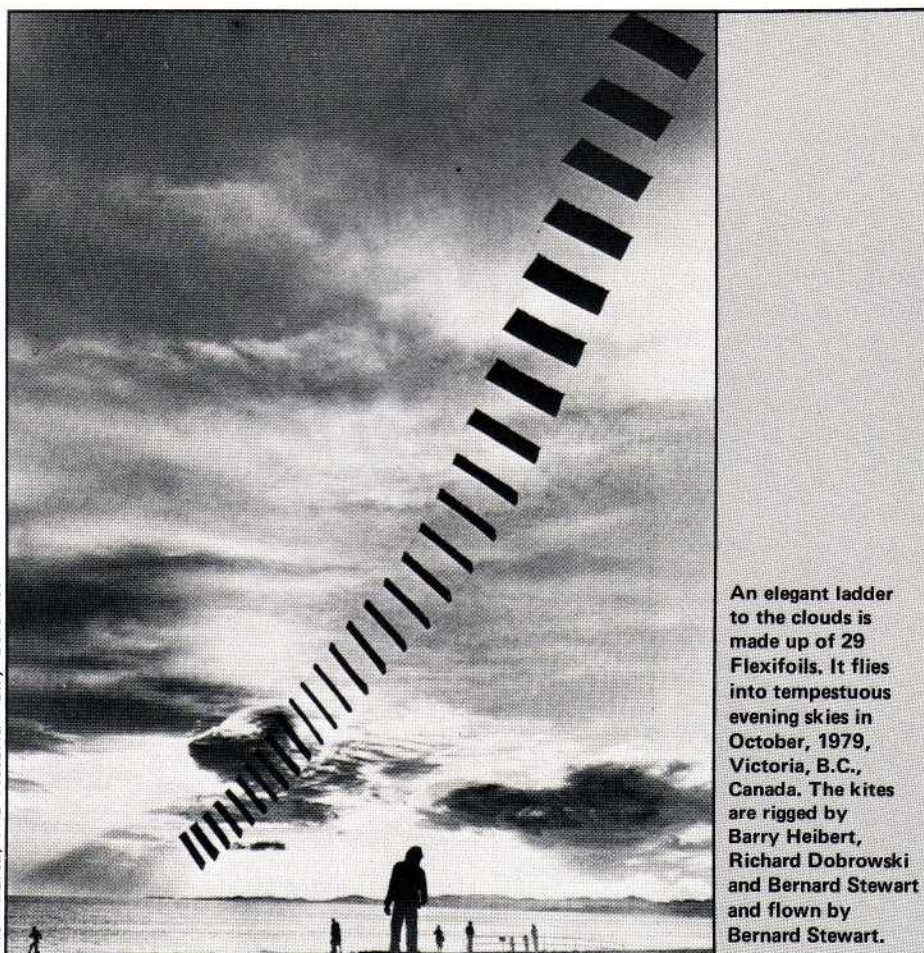
Aeronautical staff writer for *Popular Science* magazine Ben Kocivar verified the Flexifoil warning for himself, flying the kite for the first time in London's Hyde Park and writing in *PS*, "The pull was terrific. I had to lean far back as I held the control bar, maneuvering a train of three Flexifoils," concluding that it was "the most sophisticated controllable kite design I've seen."

David Pelham, author of *The Penguin Book of Kites*, offered the opinion that the Flexifoil "is undoubtedly at the zenith of dual-control kite design." (It was developed too late for inclusion in his book.)

Reviewing the kite for *Kite Lines* (Spring-Summer 1978), Curtis Marshall said, "The Flexifoil, in a word, is *different*. I would not compare [it] only to stunters but to the whole genera of kites, in which company it more than holds its own."

I've known the Flexifoil inventors Ray Merry and Andrew W. (Wilf) Jones several years now. We have corresponded and conversed in a variety of situations in various parts of the world. Wilf stayed at my home for a too-short month in the summer of 1978. We traveled together down south to meet Dom Jalbert in Florida and Francis Rogallo in North

*If Wyatt Brummitt's list were accepted (see Spring 1977 *Kite Lines*), there would be nine, including the parachute kite and rotor kite. Kite categories (as John Spendlove's *Taxonomy* in the Spring-Summer 1978 issue attested) are a very open, wind-filled subject.



An elegant ladder to the clouds is made up of 29 Flexifoils. It flies into tempestuous evening skies in October, 1979, Victoria, B.C., Canada. The kites are rigged by Barry Heibert, Richard Dobrowski and Bernard Stewart and flown by Bernard Stewart.

Carolina. Ray and I were together in France for a short time in 1978. I had first met the two in London in May, 1977, about six months after the Flexifoil was introduced publicly.

My First Encounter with the Flexifoil

A train of nine and then 12 Flexifoils was flying overhead at London's Parliament Hill. The nine-train was called the Eurostack; each 'foil was made in the colors of the nine member nations of the European common market. The flag/kites caused a real ruckus as they swooped and roared within inches of the crowd of thousands that simultaneously ducked in fright and applauded this new kiting phenomenon. Ray and Andrew were taking turns pleasing the crowds at the First British Kite Championships held at this favorite flying area. Soon another "stack" replaced the first, this one consisting of 12 Flexifoils flown together, spaced at intervals on the dual flying line. Ray was holding the control bar. To keep him in one spot, and for the safety of the crowds, a line from one end of the bar passed behind him and was staked into the ground. The 12 'foils strained to get up to their zenith, then lunged forward in a downhill rush which made a violent crash seem inevitable, but they came out smoothly and zipped back up into the sky, turning once again

to repeat their breakneck power dive, this time leveling off and skimming the ground at about six feet, just over the crowd's heads. A basketball player had better have been hugging the ground when he saw that train bearing down. Indeed, this 'foil display was the closest thing to a roller coaster one could feel in the pit of the stomach without visiting an amusement park.

Getting to Know Andrew Jones

Andrew was born in a rural village to the south of London in 1950, his father a commuting director of a London printing firm. Recently his mother had died and his father had retired and was living nearby. Andrew rents lodging on a large farm estate near Cambridge. He comes to London on the average of once a week on Flexifoil business and for exhibition flights, sleeping on a fold-out sofa in Ray's living room.

He is slim, bony in the typical pre-Beatle American conception of a proper Englishman—light auburn hair a bit thin up front, older looking than his actual age.

"Am I professorial?" he wonders when I ask how he would describe himself. I think not. More a friendly but self-absorbed scientist always puttering about. Walking along or sitting at the dinner table, one hears someone humming very faintly. Finally you identify the puzzling

sound with Andrew, humming to himself absentmindedly, oblivious to the dinner conversation. Then it dawns on you that he is humming in harmony with the 60-cycle sound of a florescent fixture or some other sound coming through the open window. (I make this observation, lest it be misconstrued, with the greatest of admiration and affection.) Andrew's favorite pastime apart from Flexifoils is 15th- to 18th-century recorder music and modeling tiny clay double reed ocarinas upon which he can play two-part harmony Elizabethan melodies. Love of music, he tells us, was inherited from his father.

On an extended visit to my home in New York state, he flew Flexifoils from atop a hill behind our schoolhouse at least once a day. On one of these days he came rushing in to ask if he could borrow a Jalbert Parafoil (the workhorse) to lift a train of four 'foils caught in a tree. I'm sure there was an easier way to do it, but not one quite so entertaining. Though my own kiteflying generally ceases with the sunset, Andrew continued into the night with little flashlights attached at the 'foil corners. To the neighbors it must have looked as if the stars had gone crazy.

During Andrew's visit I was working on several kite projects as well as sculpting. Without being asked, he would take on the problems as if they were his own, working instinctively, it seemed, in a generous, team-inspired way—showing a rare, rare quality indeed.

Meeting Ray Merry

Soon after Andrew's visit, I had an opportunity to spend some time with Ray Merry in Paris. It seemed a bit crazy, considering we were both in Paris for the first time in our lives, but Ray and I were walking briskly along the Neuve de St. Pierre in the working quarter of Paris, heads down, ignoring the sights, dodging the shoppers and stalls crowding the sidewalks, heading for Ray's hotel. Oblivious to Paris, we were engrossed in a conversation about Flexifoils and sculpture.

Ray was telling me about the upcoming British open speed sailing trials. Andrew had devised a train of Flexifoils, six or more depending on wind conditions, to be affixed to a beam at midpoint between the bows of a specially designed catamaran. Sailor/boat designers Ian Day and Paul Geoffrey have named their catamaran Flexifoils "Jacob's Ladder" in reference to the ladderlike appearance of the 'foils



Left, friends and partners in the invention of the Flexifoil: Ray Merry (left) and Andrew (Wilf) Jones. Below, 100 foot polyethylene tube, 18 inches diameter, flown in 1973, Newcastle-upon-Tyne.



stacked in train one above the other. The Flexifoils are laid out on shore—a two-man operation in the competition—and “you’ll either be pulled straightaway at high speed, or—watch out for a devilish wind—you’ll be straightaway yanked right back up on the shore.” Day and Geoffrey had been in constant practice for some months and were confident of winning the 300 square foot class; in time, the heavier classes as well. Andrew had been working on improved performance ‘foils. (Six months later he was successful in increasing pulling efficiency 40% with a new 10-foot span ‘foil.)

I looked up from the sidewalk—in disbelief at this story—for a quick sideways glance at Ray. I hadn’t really studied him at our first meeting in London a year earlier. Ray has long dark hair. He generally looks up at the flying ‘foils through dark aviator sunglasses. Now off, they’d been hiding twinkling eyes and thick eyebrows which arch together over the nose. His cheeks seem permanently dimpled in a quizzical, friendly smile. He’s an English Jalbert, I thought, reminded of the way Jalbert throws you completely off balance with talk of kites that do all kinds of things you never expected kites could (or perhaps should) do.

Ray was born into a working class family in 1952. His father is a stevedore.

His mother died while he was still quite young. Trained as an industrial designer, his natural bent is sculpture. Part of our boulevard jaunt was spent in my trying to understand the conical sculptures Ray envisioned, suggested to him by the flying lines of the stunting Flexifoils. He does not enjoy unrealized or partial solutions to problems. “I don’t know how you feel, but I’m not satisfied if things aren’t perfect.”

The Partnership

“Common to both Ray and me,” Andrew told me in one of our conversations, “was the influence of making things, the importance of using our hands and fathoming things out.

“I’ve tried on several occasions to ascertain our differences,” he continued. “We just happen to be good reflectors with each other’s thoughts. Sometimes, of course, we drag each other down, but we tend to gain momentum in conversation with each other. The basic idea, a wind-inflated wing, a primitive version of the production Flexifoil, came in a flash. We’re frequently asked which of us is the primary inventor. It’s absolutely impossible to determine. We’re a single person as far as the ‘foil goes.” The production Flexifoil was several years away from that lightning flash.

They met in 1971 in their first year of college study in the core design curriculum at Newcastle-upon-Tyne Polytechnic, a large new college built in the late 60s two hundred miles north of London in Northumberland. Both students had opted for industrial design courses with an eye to future financial solvency, but both found the more purely fine arts courses and faculty suited to their talents.

It was a one-day fine arts sculpture project which they tackled together that led to the Flexifoil. The assignment had a bit of intentional ambiguity built into it. On a blackboard in a room sans teacher were written several words. Students were asked to choose one word and interpret that in an object of their own making. They chose the word *winding*. They built a sort of wind vane which they hoped would spin around in the wind.

At our first talks in London, Ray recalled that “Not much really came of that.”

Andrew continued, “After trying a variety of forms, we arrived at bag shapes. We found a large polyethylene mattress cover bag. We put a steel ring in the opening and tethered an elastic line to that. It was all a bit haphazard, but we kept at it, making do with the materials available to us. About this time we thought about making the bag lift into the air. We were surprised by the ease with which a very large bag would inflate and stay up with wind coming through a very small opening. We didn’t know anything about inflated wings at that point, but not too long into the project we were intrigued enough by the possibilities to do some library research.”

“There was little to find out,” Ray interjected. “The only thing we came up with were pictures of a U. S. Air Force experimental pressurized wing with a three-wheeled vehicle slung below.”

They knew nothing of modern, lightweight high-density rip-stop nylon. They used cellophane tape and a primitive but adequate hot soldering iron and aluminum foil technique to heat-weld polyethylene plastic sheeting. Their first airfoil wing shape had a 14-inch span, eight-inch chord depth. The second version was three feet six inches by two feet. The airfoil wing form and gore building technique came directly from the balsa and tissue paper airplanes they had both enjoyed as a hobby. The small wings were still tethered as a kind of kinetic sculpture. The thought that they were working on a kite had not



Left, an early six-foot polyethylene Flexifoil tracking close to the ground; 1973, Newcastle-upon-Tyne. Below, Ray Merry flying the early mattress bag on $\frac{1}{4}$ -inch model aircraft elastic line.

entered their minds and as a consequence they had not yet stumbled onto Jalbert's work with inflated kites.

The early experiments with the two small wings were encouraging. "They seemed to want to go up into the air," Ray said. "We decided to try an eight-foot span."

"To keep the wind spread across its span we introduced a rigid cross stick at the leading edge. That happened rather early in our experiments," Andrew said.

"Then it was a question of where to tie the line. We had a fan of bridle lines positioned along the beam at each gore, all gathered together and tied to a single flying line. This line arrangement held us back quite a bit. The wing tended to lift slightly into the air but would wag back and forth on the towing line quite erratically. Quite fortunate, this erratic behavior, as it turned out, for at one time the wing flipped over on its back and took off again. There was an immediate improvement in its lift characteristics. It went back up in a wide high flight, arcing broadly but gently left and right. We then thought of trying to induce lateral control. At this juncture we were closer to making a kite," Andrew concluded.

"It was a bit like a cricket match as this thing rose back into the air. People watching started spontaneously clapping

and cheering," Ray recalled.

"It was still very much a hit and miss affair whether we could get the thing to fly at all. We put a lot of energy into making it fly each time we went out. Some days we would just not get any flight at all," Ray said.

The industrial design faculty could see little practical use for the invention; it was recognition from the fine arts department that provided an ongoing sympathetic and encouraging audience—along with friends and family members.

"It was all a practice those years at Newcastle," Andrew continued. "Even after we'd finished at Newcastle we hadn't really developed a foolproof kite. The last thing we did at school was to build the first fabric kite. It had a 15-foot wing span and was made of proofed nylon with the help of a seamstress in the fashion school. Brenda Smith (Ray's longtime friend of college days, now secretary of Flexifoil, Ltd.) actually made the first six-foot wing of spinnaker nylon the summer after we'd finished college."

Brenda's mother suggested they consider using net curtaining and this led them to the net-covered narrow leading edge slot which now exists on the production 'foil. A college lecturer who had witnessed the activity suggested that they reduce the number of bridles to three, one at each

wing tip and one in the center. (The center one was necessary to give the original wooden spar needed strength.)

Erratic behavior was still the rule. Once, Ray averted a dive, turning the control bar completely over in a reflexive movement. The wing responded with a wide loop.

Somewhat later, Andrew's parents came up to Newcastle. "We went out flying together. My father did a loop right around without turning the control bar over. That was a moment! Until then we had thought it necessary to immediately turn the bar over to take the line loops out. The control bar had been, right along, the line counterpart of the kite spar—and equally importantly, a really useful way to quickly take up our flying lines. Anything we could do to get us through tangled lines which were quite frequent was most appreciated. In the early stages of flying the wing as a kite, the bar was shorter than its current three-foot length. We reached out to pull on the individual lines to control the kite. It was later that we went to the longer bar and pulling each end of the bar back for controlled flight.

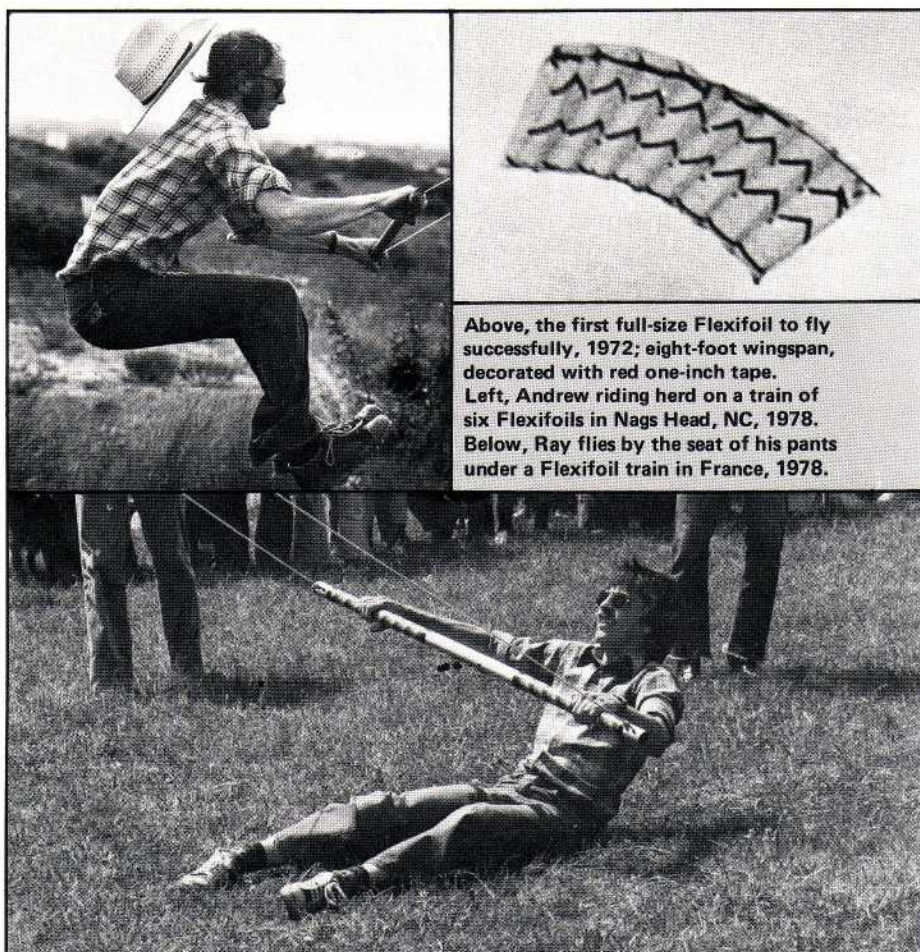
"We experimented with a variety of positions for the spar in relation to the little vents. We had eight different airfoil shapes by then—six variations on wing span and two chords. We hadn't completely fathomed out the workings of the 'foil. We didn't really know how or why it worked. We realized what effect the general nature of the shape had on its flight (the narrow chord reduced drag and induced speed), but we didn't fully appreciate the importance of the flexing spar.

"We always wanted to keep it as simple as possible. We would really have liked to have done away with the spar," Ray mentioned. "The spar kept us away from the Parafoil configuration and its steady flight characteristics."

Andrew commented, "But we knew that this would mean shrouds (as with Parafoils), which would have been more complicated, not simple, visually, as we required."

Ray said, "We were still tying the flying lines off, staking them into the ground. We wondered if we or anyone else could endure the frustration of tangled flying lines in a controlled flight."

At the risk of implying at this late point that there was outright theft of Jalbert's Parafoil design, I asked for clarification on what effect the Parafoil had



Above, the first full-size Flexifoil to fly successfully, 1972; eight-foot wingspan, decorated with red one-inch tape. Left, Andrew riding herd on a train of six Flexifoils in Nags Head, NC, 1978. Below, Ray flies by the seat of his pants under a Flexifoil train in France, 1978.

had on the Flexifoil development.

"We were concerned that we weren't working on something that had been discovered before," Andrew began. "Yes, we had a feeling that somebody must have stumbled on this before. Our natural way of working is trial and error. Neither of us are readers, so we simply hadn't come across an airfoil kite."

In 1975, Ray acquired the Newman book *Kite Craft*. There he saw pictures and read of Jalbert's Parafoils for the first time.

"I remember writing and telling you, Wilf," Ray said, "and my initial disappointment."

They decided, however, that, apart from the inflation aspect, they were onto something different. The behavior of their kite and the flexing spar which adjusted angle of attack in varying winds seemed novel enough to warrant applying for a patent.

In the summer of 1976, Brenda suggested they go to see an exhibition of kites at London's Institute of Contemporary Art. This was the first time the inventors saw actual Parafoils. They inquired if anyone would be interested in a new kite idea and were referred to London's then-new (three months old) Kite Workshop and its director Eric Gibson. They walked over to the shop that afternoon. Gibson tentatively expressed interest in

their kite and gave them their first spinaker nylon. Shortly after, provisional patents were approved. The limited production kite, christened "Flexifoil," was shown for the first time publicly on October 10, 1976, at the British Kite Flying Association's festival at Old Warden Aerodrome—five years after its inception at Newcastle.

Since then, technical work has continued. Cambridge University's Department of Engineering has done wind tunnel studies of the Flexifoil. Maximum pull achieved in diving is in the range of 100 pounds. The production model, in 1.1-ounce rip-stop nylon, weighs 135.5 grams and takes 40 minutes to sew. Andrew is working on a high-performance low-wind spar. Four-foot span 'foils seem to perform satisfactorily; three-foot spans in a proportionate configuration have not performed well. The new generation of 10-foot 'foils maneuver sluggishly but gain considerably in pulling power. They have increased both lift-to-drag ratio and coefficient of lift. A 20-foot span 'foil is in work for the application of pulling larger seagoing craft.

Flying line length of 200 feet works well for the Flexifoil—and is the legal limit for kiteflying in Great Britain. Theoretically, there is no limit to the number of 'foils that can be flown in train. Twenty-

nine is currently the maximum known number tried. Flexifoil train kites are separated by a minimum of two feet of connecting line—more in stronger winds. One 'foil flies on 60- to 80-lb. test lines. Four 'foils in train in a moderate wind require 200-lb. lines. The heavier line required adds drag. The technique of control is very difficult, comparable to speeding a railroad engine around a curve with a long line of cars attached. Speed of the 'foil has been officially clocked at 95 miles per hour. Unofficial reports note speeds of over 100 miles per hour. The average speed is 60 miles per hour. Acceleration from 0-95 is less than three seconds. In a dive from a 200-foot zenith, the 'foil is at the ground in under three seconds in a moderate breeze.

Andrew wrote to me last spring, recalling the passing of winter: "I went Flexifoil skiing in the meadow last month. Only I didn't need skis. Gum sole boots on the snow were quite slippery enough."

I asked the inventors if they wanted to identify anyone else important to the development of the Flexifoil. They had mentioned in early letters that Peter Powell had a great deal to do with popularization of the two-line stunting kite. Sid Mills and Mark Cottrell were early enthusiasts and experts at Flexifoil flying, helping to show its potential as a sport kite. Mike Pritchard, an expert in fishing rod technology, made the prototype fiberglass spars and helped solve the production model requirements. Jilly Pelham helped work out the pattern and the lay and cut of the fabric for production sewing.

In the intervening time from the Newcastle-upon-Tyne polyethylene prototypes to the sleek rip-stop production models, Ray and Andrew have maintained a steadfast friendship and working partnership. Andrew observed recently, when I asked him to describe himself and Ray, that Ray had a suit which he wore on occasion while he, Andrew, hadn't yet felt the need to own one himself. Ray has become more actively involved in the ongoing Flexifoil company production and business matters. Andrew's main interest remains in research and development. The company hopes to market new products as well as improvements and new uses for the Flexifoil.

In the exploration of "sailing, free flight and wind generators," the Flexifoil's future should be most interesting. Its place in kite history is already well assured. ◇

'79 EVENTS

High Times in the Rockies



Happiness lights up all the faces at the Mother's Day Kite Festival in Colorado—the annual “do” of the Beulah Valley Association of Tethered Flight.

Story by Frances A. Weaver
Photographs by Myron Wood

“I couldn’t believe it! We came over the last hill headed for Beulah, and it looked like a hundred kites in the sky all at once. I said to my wife, I cannot believe it. I never saw so many kites—not in the sky at one time. It’s beautiful. Whoever thought kites were that beautiful?!”

That is what nearly everyone says when the Beulah Valley Association for Tethered Flight teams up with the Sangre de Cristo Arts Center of Pueblo, CO, and the Boy Scouts for our Mother’s Day Kite Festival.

Literally hundreds of people turn out. Some are Beulah residents, but there are not very many of them (600 or so in all). Many come 26 miles from Pueblo. Some arrive from cities as far away as Denver or Boulder. Others journey from Alamosa and the San Luis Valley—a hundred miles in the opposite direction.

Some of these people make the trip for the purpose of participating in the kite festival. Others see the kites in the air and stop to see what is going on. They usually come back the next year with kites of their own. Some stay 10 minutes. Others hang around for four or five hours. Some fly kites, some take pictures, some give advice, some buy kites, some just watch. They all seem to have a good time.

There is a fascination in observing anything propelled by the invisible force of the wind. Mutual management by man and nature.

Kites bring that feeling to Colorado. Watching a sky filled with kites, observers

tend to choose favorites. “See that big eagle? It stays up when the others come down.” “I did not know kites came in so many shapes and sizes. When I was a kid . . .” Most incredulous: “The sky is full of kites, but none of those people are running! When I was a kid . . .”

Here in Beulah, a highlight of our Mother’s Day festivals has been the presence of Dinesh Bahadur, one of the world’s great kite masters and promoters. His spectacular kites and his expertise in flying them are the center of attention. Why would this man participate in a kite festival in a sleepy little foothills town in Colorado? Why would Beulah have a kite festival, anyway?

The answer to both questions is the same: “For fun.” To be more explicit, “It feels good. It is a need of our times. It helps you to relax and be happy. You forget the rest of the world and there is only you and your kite.” So says Dinesh Bahadur. So goes the Beulah Kite Festival.

It all began with four housewives who had become kite enthusiasts in 1974 after reading about and/or visiting Bahadur’s kite store in San Francisco. Dear Peggy Gandy, recently deceased, suggested we formalize. We named ourselves the Beulah Valley Association for Tethered Flight, having heard that term from Domina Jalbert, inventor of the Parafoil. Oh, we considered other names like “Colorado Kite Club” or “High-flying Housewives.” The name we chose has more class, we feel. Beulah Valley Association for Tethered Flight. Little did we know what that would get us into!

Eventually, we added three more members because they have pastures, but we had no thoughts of expansion or further organization. We had served our sentences on committees and in Good Works. We invited few people to fly with us—not even our families.

Then it happened. The director of the Sangre de Cristo Arts Center in Pueblo learned of our group. Kiteflying appealed to her, too. Before we knew what had happened, our far-away hero Dinesh Bahadur had been invited to Pueblo for a kite festival which would be held in Beautiful Beulah. Just guess who the co-sponsors would be.

It is astonishing how little it takes to start a tradition. We said only, “You Arts Center people can handle the promotion, the Boy Scouts have a nice pasture, we will fix a little picnic for the folks who help.” Since those famous last words the show continues to grow. There is no admission charge. No reservations needed. If Mother’s Day is bright and sunny, there is certainly going to be a breeze in Beulah (6400-foot altitude), so the kite festival is on. We have no competitions. Only kites in the air for all to enjoy.

There are now other kite festivals in Colorado. We are relatively sure ours has had the longest run: four years. We cannot claim to be as important as the kiting events in San Francisco or Washington, DC. Still, it is ours to share with anyone interested in “beauty on the back of a rolling wind.”* That is what counts. ◇

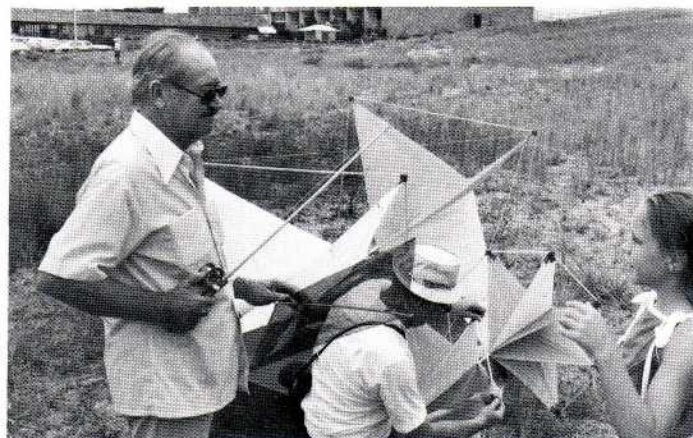
*King Gupta, India

'79 EVENTS

Rising Again at Kill Devil Hills



Guy D. Aydlott



Guy D. Aydlott



Mel Govig

At the Wright Kite Festival, Bill Tyrrell's Flow Form kite (Parafoil derivative) awes viewers. Above, Jesse Donaldson of Florida holds a fighter kite while Bill Wetzel of New York checks his Rogallo Corner Kites. Below, Wetzel talks to Rogallo himself, who holds an early original Flexikite.

By Mary E. Ames

Kitefliers from as far away as Cocoa, FL, maneuvered their craft through fickle winds and even through ocean waves in competition for 22 ribbons and prizes at the First Annual Wright Kite Festival in July, 1979. The occasion at Kill Devil Hills, NC, continued the tradition of the Nags Head, NC, kite contests of summers past.

The elements proved enough of a challenge at this site—exactly one mile from the spot where the Wright brothers flew their first glider as a kite in 1900—that rival fliers fell to cheering one another along and helping each other keep kites aloft for the requisite five minutes.

A modified box kite shaped and painted like a crab was awarded "best in show" and "most unusual aerodynamic design (novice class)," but not until its designer, Charles Dunton of Richmond, VA, had fished it from the sea and replaced two broken spreaders. Dunton's kite and A. Pete Ianuzzi's six-foot semi-circular multicolor kite, flying near each

other, were victims of a phantom down draft which originated high over the beach and selected only those two kites to drive, temporarily, from the sky.

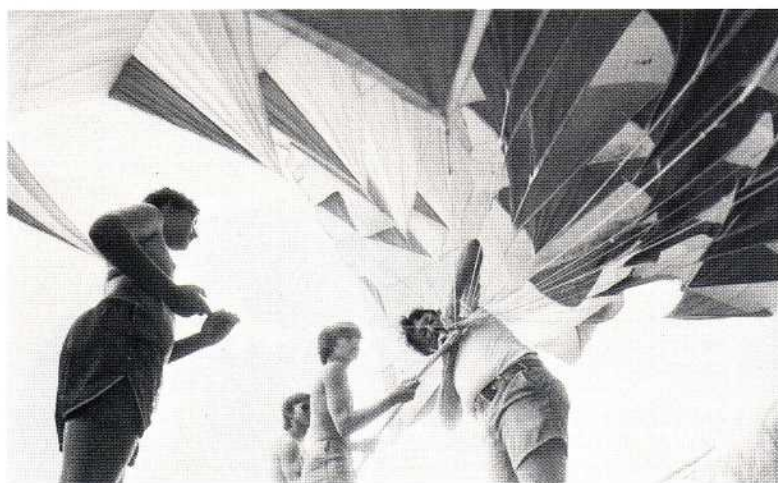
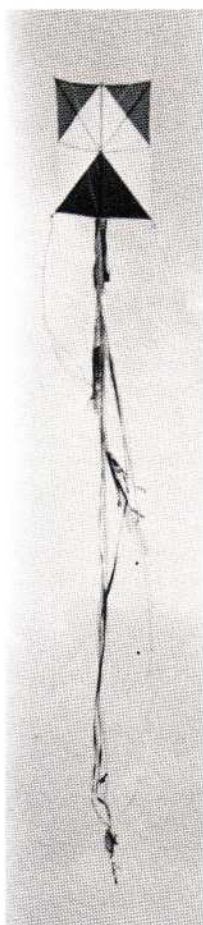
The most exciting competition occurred among a dozen novice fliers who tried to get their kites to haul out 500 feet of line the fastest on the light morning winds. Alec Dunton of Richmond won this with a graceful delta wing bird made of Tyvek®. Eight-year-old Mike Ringelspaugh of Rocky Mount, NC, came in second and Kate Thoms of Falls Church, VA, and Dan Ingle of Sylvania, OH, tied for third place.

Though unable to attend the festival, Rick Kinnaird of the Maryland Kite Society telephoned in a special cash award for the kite which best depicted the spirit of John Irving's zany novel *The World According to Garp*. At that moment, G. William Tyrrell of Huntingdon Valley, PA, was performing barrel rolls with a 200-plus square-foot Sutton Flow Form Parafoil, which ended up draped over the power lines and was awarded the special

prize on the spot.

The winds blew stronger after a brief rain shower and break for lunch, and the competition continued for the largest homemade kite. Bill Wetzel of Clifton Park, NY, captured first place in the experienced class with a 64-square-foot version of Francis Rogallo's Corner Kite. Tom Lewis took home to Richmond a first in the novice class for a 46-square-foot delta made by a group of third graders in summer camp.

John Ringelspaugh, Sr., of Rocky Mount, NC, placed first in the most unusual aerodynamic design category (experienced class) with a homemade Prof. Waldof's double hexagonal box kite. Jesse Donaldson of Cocoa, FL, who has been experimenting with kite and autogyro designs since the 1940s, won second place in the design category with a split-level diamond. The 71-year-old Donaldson also won ribbons for "senior competitor" and for traveling the greatest distance—901 miles—to the festival. Pete Ianuzzi of Catonsville, MD, tied for third place with



Top left clockwise: Mel Govig's four-foot Nisei kite; Valerie Govig and Guy Aydtlett chatting; Tyrrell's second mammoth kite, a Jalbert, undergoing adjustment by John Stubbings of Kite Kingdom; Charles Dunton of Richmond, VA, with his "most unusual" crab kite; Alec Dunton with Tom Lewis, both of Richmond, admiring Alec's Tyvek® bird.

Francis Rogallo of Kitty Hawk, NC, who entered his 30-year-old Flexikite, the original model which evolved into the hang gliding wing. In the novice class, Larry Carstensen of Johnstown, PA, and Ellen Wood of Richmond placed second and third behind Charlie Dunton's crab.

Before and after the competition, about 60 different kites were flown, including some oriental beauties, Mel Govig's train of miniature diamonds, Valerie Govig's attractive star kite, Aylene Goddard's dress-matched delta, Guy Aydtlett's handsome delta and a 400 square-foot Jalbert Parafoil which Bill Tyrrell acquired two years ago from the National Aeronautics and Space Administration.

No one entered the category, newly established this year, for the best kite rendition, built from scratch, of the Wright brothers' 1900 glider. There is a rumor, however, that at least one person has plans to build a full-size replica of that glider and fly it next July, on the third Saturday, at the Second Annual Wright Kite Festival. ◇

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lower photos, Mel Govig; upper photos, Jim's Camera House, Kill Devil Hills, NC



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a challenge from
William A. Rutiser and KITE LINES

announcing the INTERNATIONAL EXPOSITION OF ASYMMETRICAL KITES Burtonsville, Maryland, USA—JUNE 7, 1980

THE STORY

Two years ago Bill Rutiser, an avid kiting member of the Maryland Kite Society and Lifetime Subscriber to KITE LINES, offered an award for the Best Asymmetrical Kite at the annual Maryland Kite Festival. There were no responses the first year. Bill surmised that the annual graphic spread of the publicity for the competition had kept it from realizing its potential. Bill was ready to drop the offer when he talked to KITE LINES about it and a new approach was conceived. It seemed obvious that KITE LINES could best reach kitefliers in every corner of the U.S. and around the globe. Bill agreed to let KITE LINES give it a try. Rules and information are as follows.

THE ENTRY FORM

(Please print.)

Name of kite maker
(or captain of club): _____

Check appropriate boxes:
☐ I will attend the Exposition
in person.

☐ I will send my kite to a proxy flier.
Proxy's name and address: _____

Our club will be ☐ bringing ☐ sending
(quantity) kites to the Exposition.

Address _____ State _____ Zip _____

City _____
Telephone (give area code) _____

Description of kite and statement of maker's intentions:

Reserve for me _____ (quantity) I.E.A.K. patches @ \$3.00.
Signature _____
Date _____

THE RULES

1. A kite entered must be designed and made by the entrant or the entrant as captain of a team.
2. The Exposition is Open Class; that is, an entrant, whether "professional" or "novice," 8 years old or 80 years old, enters on an equal basis with all other entrants. Judges and KITE LINES employees may not enter kites.
3. Any entry form or design of kite may be submitted in advance, deadline May 1, 1980.
4. An entry form for the Judging Committee and fly your kite yourself. Or you may ship a kite to a proxy flier (any willing local kiter) or to the Judging Committee.
5. You are invited to attend the Exposition in person and fly your kite yourself. Or you may ship a kite to a proxy flier (any willing local kiter) or to the Judging Committee.
6. Kite clubs are encouraged to bring or ship your kite in a club effort or represent their club. Kites in any quantity to represent flying day clubs may wish to have an advance flying day to test and select their entries.
7. If you ship your kite to the Judging Committee, be sure it is well marked with your name and address. Ship to: I. E. A. K., c/o Robert S. Price, 3839 Dustin Road, Burtonsville, Maryland 20730, USA. Observe postal regulations regarding length, girth, weight, etc., and consider insurance for your kite. Be sure to include with the kite any special instructions for preparing and flying it. Also include, if the kite requires, any special line or apparatus.
8. For return shipment of your kite, please send funds as necessary to cover the expense (shipping plus insurance; otherwise, your kite will be retained by KITE LINES for archival purposes or donation to a kite museum. Return shipment of your kite will be made within 20 days after the judging.
9. Entrants may ship more than one kite, as for different wind conditions, but the maximum is three kites per entrant. All kites received will be flown and judged, but only one per entrant may be accepted in competition.
10. KITE LINES reserves the right to photograph any kite entered and feature it in the journal, possibly with descriptions and measurements.
11. KITE LINES and all participants involved in the Exposition shall not be liable for any loss, injury or damage to any person or property arising from the Exposition or the shipping and handling related to it.
12. Decisions of the Judges will be final.

THE PURPOSE

(1) To explore, stimulate and enjoy asymmetry in kites; (2) To find and recognize the "Best Asymmetrical Kite," defined to be: that kite which is most asymmetrical that still flies well (as well as a conventional symmetrical kite). Craftsmanship, beauty, ingenuity and other usually-admired qualities of kites will not be considered except if two otherwise equally worthy asymmetrical kites are in contention for recognition.

THE REWARDS



Newly added cash awards! Three \$20 Australian bills (commemorating Hargrave) will be awarded to the First Place kite and single bills will be awarded to placing kites. In addition, plaques of asymmetrical design will be presented to winning kites. EACH asymmetrical kite entered will earn a framable asymmetrical certificate and eligibility to purchase an embroidered cloth patch—asymmetrical, of course—the "half-Eddy" emblem. Only entrants, judges and proxy fliers in this competition may purchase the patch. Also some of the best asymmetrical kites will be featured in a future issue of KITE LINES.

THE DEADLINES

May 1, 1980, deadline for receipt of entry form.
June 6, 1980, deadline for receipt of shipped kites. June 7, 1980, is Exposition Day, in Burtonsville, Maryland, USA. (Rain dates: June 8, 14 and 15, 1980.)

THE JUDGES

CHIEF JUDGE: WILLIAM A. RUTISER
Guy D. Aydlert
Charles Bernstein
William R. Bigge
W.D. (Red) Braswell
Bevan H. Brown
Mel and Valerie Govig
Arthur Kurle
Theodore L. Manekin
Curtis Marshall
Robert S. Price
Tal Streeter
Names are provisional; some may decide to enter kites instead.

artists' sketch of the
"half-Eddy" emblem

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SUN YELLOW STRIPE
SKY BLUE LTRS.
& EDGE

IEAK

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Baltimore
Maryland 21207
USA

'79 EVENTS

Shirone Comes to Seattle



David M. Checkley



Dale F. Leener

Stupendous but limber kite made and carried in Seattle by a team from Shirone, Japan, led by Kazuo Tamura; and a group of "smaller" kites.

By Louise Crowley

When I was a child, aged Indian women sat cross-legged on the sidewalk beside the Bon Marche, each surrounded by a jumble of handwoven cedar-bark baskets for sale to the passersby—and quite sensibly, too, because the Bon was the busiest place in Seattle. It still is. A statelier building now, and further uptown, the Bon has never lost its knack of attuning with almost uncanny precision to the changing pulse of this city. So it *would* be the Bon that would come up with such a presentation as *The Orient Expressed*.

I heard of it through a phone call from a fellow kiter: the Bon was preparing a big promotion with an oriental motif, and as part of it, was going to bring a whole kite team from Japan to make kites—even a giant *o'dako*, no less—right inside the store. The Washington Kitefliers Association had been asked to help.

A week later, the Bon had been transformed. Brightly painted torii entrances, colorful eight-story banners and window displays carried the theme all around the block. Inside, the main-floor escalator had been converted, spectacularly, into the gaping mouth of a huge Chinese dragon, and topping a decor replete with bamboo,

chrysanthemums and oriental artwork, a flock of six life-size crane kites by Shuhei Goto hung from the ceiling in flight formation. The giant *o'dako*, already assembled and painted with a traditional kabuki character, covered a 16x23-foot section of the east wall.

And everywhere there was activity. The sound of drums drew me to a stage, where a team from Kobe was putting on a martial-arts display. I found other craftspeople, artists and performers demonstrating their skills on every floor. Halfway up to the kitemakers on the topmost floor, I recognized Tsutomu Hiroi polishing an angular aluminum abstraction, one of the largest of a prominently displayed group of his earthbound sculptures. On another floor I got sidetracked by fragrant oriental cooking demonstrations. Clearly, *The Orient Expressed* was a hit.

For local kite enthusiasts, of course, it all revolved around Hiroi and the visiting members of the Shirone Kite Team. It was a visit they and Dave Checkley of the WKA had long hoped for. Dave had met Kazuo Tamura of the Shirone team in Tokyo a year and a half before, and Tamura had told him then that if he could get a sponsor for a trip to the United States, he and other members

of his team would bring their materials, make kites here and leave the finished creations when they returned. When the Bon began planning for *The Orient Expressed*, Dave saw his chance and secured its sponsorship for Hiroi, Tamura and five other team members. Four more Shirone kites and three Japan Kite Association members from Tokyo and Kyoto joined them for the Sunday activities on a tour arranged by the Japan Travel Bureau. Hiroi and Kenichi Koshiba were the only English-speaking members of the team, but Dan Kurahashi, a JKA member from Vancouver, B.C., Canada, was on hand for most of their stay to help interpret.

Besides the giant *o'dako*, the team made several 10- to 18-foot hexagonal kites and dozens of smaller ones, including some whimsical bird and insect kites, during its week of in-store demonstrations. The men's skill in painting them was a delight to watch: they sketched the designs—so exotic to us, so obviously familiar to them—with swift, sure brushstrokes in light gray ink and, keeping brushes half-dried with quick strokes on scraps of absorbent paper, added color and shading with the same unhesitating deftness. On the smaller kites, a picture seemed to develop as magically as a

Polaroid print. An equally sure touch was evident in the way they judged the varying lengths of bridle lines and knotted the bridle for a big rokkaku; these men must have been *born* making kites and never stopped since.

There was time for flying them, too. The team arrived on a Wednesday; that Friday we had a fine kitefly and picnic at Gasworks Park, and another on the following Tuesday. And time to talk about kites: Dave and Dorothea Checkley put the whole crew up in their big house on Queen Anne Hill, and most of the Shirone kitemen's free time was spent with WKA members. Saturday, the Checkleys hosted a reception and dinner for a houseful of WKA members and guests. The big o'dako was to be flown at Magnuson Park the next day, and part of that evening was spent stretching its new polypropylene flying line between the trunks of two big trees in the parking strip beside the Checkley house.

There'd been a good deal of correspondence about the flying line before the team ever left Shirone. Though not as

well known in the U.S. as Hamamatsu, Shirone, in the Niigata prefecture on the west coast of Honshu, has been a kite festival town for some 300 years. Its team's regular and traditional line is hand-made of hemp, a controlled substance in Japan and likely to run afoul of customs regulations. So for the trip to Seattle the men had decided on a polypro "un-Manila" flying line, with jute for the bridle. Working well past nightfall, they and several energetic local kitemen pulled and tugged and wrapped the line as tightly as they could round and round the tree trunks, where it was left stretching overnight.

Meanwhile, the big o'dako had been posing problems of its own. The Bon had expected to have it built, with the others, in the workroom on the eighth floor. That was before store personnel actually saw the length of its bamboo poles and realized the impossibility of moving them between floors. It ended up being constructed on the main floor. Then, like the proverbial boat built in the living room, it wouldn't fit through the store's five-foot-wide, seven-foot-high door openings. For

a while it seemed as though a set of doors would have to be dismantled, but then Hiroi solved the problem of rolling the kite tighter and squeezing it through. Once out of the building, it was trucked to a large airplane hangar near the flying site. Magnuson Park, on the shore of Lake Washington, is still in the process of being developed as a park on land formerly part of a U.S. Navy air station.

Sunday was the big day. The Bon, with co-sponsorship by Seattle's morning newspaper *The Post-Intelligencer*, had scheduled a day-long series of contests and sports events, including boat races in the smooth water of the breezeless morning.

In Seattle, when the wind blows, it's raining. When the sun shines, there's no wind. Kiteflying contests were scheduled to begin about noon. Before then the Shirone team, with the assistance of spectators, managed to get their giant kite more-or-less airborne, but could keep it up only until they ran out of running speed at a rise in the terrain. But the air did begin moving a bit as the contests started. The four events were open to all



From left counterclockwise: "Orient Express" theme kite airborne; preparations for launch of Shirone kite (and J.C. Young's half-visible centipede); working on one of the kites at The Bon Marche store; braiding bridle lines; getting the big kite out the door at The Bon.



Dale Fleener, outdoor photos; David M. Checkley, scenes at The Bon

comers and to kites of occidental as well as oriental design, with cash prizes for first place in each event and gifts for second- and third-place winners. Every contestant—but *only* contestants—was given a ticket on the Grand Prize drawing—and the prize was one of those magnificent Goto crane kites. At that, my usual reluctance to enter competitions vanished in a flash.

The judges awarded "Most Beautiful" to Margaret Greger for a multicolored Flow Form Parafoil. "Most Interesting" (a novice category) was a frame of four red and blue diamonds jointly constructed by Atsuko Brewer and Faye Leong. "Highest Flier" was young Jim Greeno's double-keeled delta. "Best Logo Kite" went to a vented delta by Bill Lee. One of my appliqued Eddys came in second to Margaret's kite, and the two of us were still congratulating each other when Dave, presiding over the awards, urged a small child to come forward and pick out the prize-winning ticket. The kid wouldn't come, and Dave coaxed another. At last, the second little kid selected a ticket and gravely handed it up to Dave, and Dave read out—*MY NUMBER!*

Oh, that wonderful little kid! If I knew who he was, I'd write a new will! My prize crane was 65 inches long, dis-

assembled. There was no box to pack it in, and I was already carrying around a bulging kite bag and a shoulder tote full of reels. John Dusenberry locked it in his car for safekeeping, and with the formalities concluded, I went off to fly kites freely in the rising late afternoon breeze. A dragon-headed centipede, J. C. Young's latest, was still waiting for more wind; but the Japanese visitors were flying small oriental kites, stunters and Flexifoils were warming up and various winged-box con-



Louise Crowley and her prize Goto crane kite.

figurations appeared among the lighter kites that had held the field earlier.

Some friends wanted to see my new bird and we went to John's car, but John had lost his car keys. We combed desperately through the weeds. At last someone found the keys; we raised our eyes and there was the giant o'dako, floating—incredibly!—above a westering sun.

Our Japanese visitors flew home the next morning, but the kites they made here stayed to brighten Seattle skies. The huge o'dako, rebridled and with flight damage to its mulberry paper skin repaired by WKA members, is again stored in the hangar. The Bon, with no space to exhibit it permanently, donated the giant kite to the Pacific Science Center, where it will be displayed at the WKA's next kite show in the spring. The willow-framed, rice-paper-covered Goto crane will hang, till the end of the winter rains, from the ceiling of the biggest room in the Crowley house. It's such a lovely and fragile-seeming work of art that I hesitated to risk it to the air—but it *is* a kite: its proper canvas is the sky. As it turned out, I needn't have feared. Perfectly balanced from its single point bridle, it flies with all the assurance of its living prototype. Cranes, after all, are a symbol of long life in Japan. ◇

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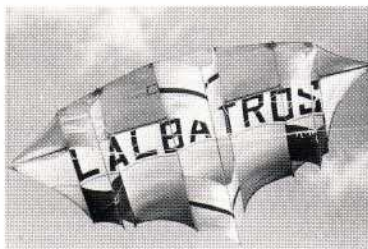
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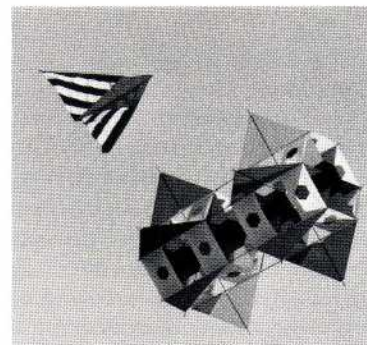
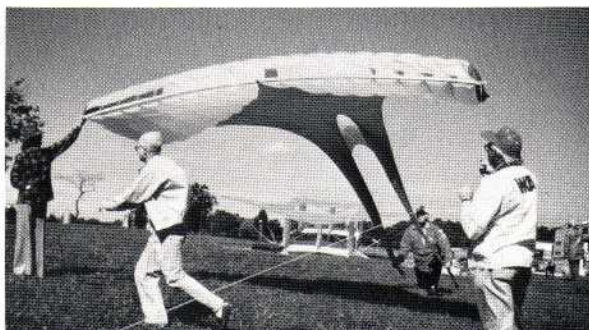
The Manassas Second Annual



Flying at Manassas, from left counterclockwise: L'Albatros flown by Lucien Gibeault of Quebec, given the "man and beast" award; a triple-sized Flexifoil variant by Curtis Marshall with Kinnaid's Cody in background and launchers in foreground—Meg and Curtis Marshall, W.D. (Red) Braswell, David Checkley;



William Pase of Ottawa and his innovative fine-flying uguied "inverted box," which assumes shape automatically in the wind and won "spectator's choice"; a doubled-up decorative Prof. Waldof box made by the Cloud Pleasers—John Rausch and Bruce and Carolyn Kennington, with one of their deltas over it; (inset) Garry Woodcock of Toronto and his little engine that could.



Photos: Garry Woodcock (L'Albatros, Pase by David Checkley)

How better could a kiter spend a beautiful October weekend than with 110 fellow enthusiasts from the U.S., Canada and England? It was the American Kitefliers Association's second annual meeting and festival on October 4-7, 1979, in Manassas, VA.

Under a dazzling display of kites, the get-acquainted reception was hosted by the Maryland Kite Society on Thursday night in the Ramada Inn's hall. The next morning was the meeting proper, at which bylaws changes were adopted and board members and officers elected. A resolution was passed to "endorse and support *Kite Lines* magazine," reflecting the mood of good will present. The afternoon was given to workshops on kite photography, knots and such, but most of the real idea-swapping went on informally everywhere in a constant buzz.

The kite auction was held that evening under the masterful gavel of Mel Govig and netted AKA \$2700 for the donated kites. The prize of the auction was a huge Shirone rokkaku kite donated by the Japan Kite Flyers Association and brought to Manassas by David Checkley of the Washington Kitefliers Association. It sparked the highest bidding of the night and was sold to Pete Ianuzzi for \$290.

On Saturday was the festival at the superb site of the Manassas Battlefield National Park, and the weather was sunny and wind-blessed. Approaching the field and seeing the sky punctuated with colorful wonders was like entering kiter's heaven. One finds it difficult to unload a car and assemble kites while feasting the eyes and babbling incoherently. It was spectacular!—one inventive kite after another. A high point (or rather, as Nick Van Sant joked, "a new low in kiting") came when bets were taken on how much time Rick Kinnaid's Cody, previous victim of several quick crashes, would spend in the air. To the sound of many gasps, it flew—and flew well—and flew long. Relatively long, that is. For a full 9 minutes 43 seconds it filled the sky—and then cracked up into a tangle of orange and yellow muslin and sticks plunging to earth.

To list any kites is to leave out some, but here goes: Peter Powell stunters flown by the ebullient inventor himself; Steve Edeiken flying an elegant stunting train of Nagasaki-patterned kites (awarded "most beautiful"); Dave Checkley's glittering beauty of a centipede; Bill Bigge and one of his Janus airplane kites; a stack of pastel Flexifoil Skysails trailing light

ribbon tails; Hugh Harrison's flags of the U.S., Canada and Britain flown from the line of a Jalbert Parafoil; Betsy Lewis's novel dorsal-finned Allison sled, pulled with line and winder from inside a beautiful walking stick handcrafted by Bob Katkowsky; Bill Rutiser's rokkaku with decoration to simulate asymmetry; Tom Herr's specially-made Parafoils; John Sherburne's all-day-up eagle Conynes; Hank Szerlag's racy black and yellow "ladybug" circular kite; Peter Waldron with a new star-shaped variant of his Prof. Waldof kite; Gerard van der Loo of Holland with the only kite that "Charlie-Browned" in a tree. On the field and at the banquet that evening, many awards were made, but most of us had already been rewarded.

For me perhaps the undiluted moment of grace was at day's end on the field when Steve Edeiken and Olan Turner performed a stunter sky ballet to music. Without rehearsal, filled with risk, it was extemporaneous flying poetry. Dusk rolled quietly over this dreamy scene, soft as a Maxfield Parrish vista. Mary Ames later said, "It was as near to a perfect kite day as I ever hope to see." I second that.

Valerie Govig



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On May 5th, 1980, the people of Sagami-hara, Japan, will mark the 150th annual flying of the giant kite, a festival of color and culture. Interrupted only once by World War II, this impressive ceremony begins on Children's Day (formerly Boys' Day), which is one of the important holidays in Japan and is part of Golden Week, so called because many festivals and observances occur at this time. Some Japanese refer to it as Golden because they work only a few days and are free to celebrate, rest, relax and enjoy the remainder, and this is contrary to their normal work ethic.

But for the inveterate kitefliers there is no rest. All over Japan, kite groups spring into action and their lively festivals abound everywhere. Carp windsocks fly from houses in cities, towns and farms. Kites dot the skyline. Many are tethered to a field post, where the farmer can till and enjoy the flight that signals his expression of the glory of the season.

The kitefliers' holiday is full of frantic activity as kites for centuries have been the ultimate statement or expression of the Japanese vernal rituals. I compare to votive prayers the many kites that are dedicated and flown in honor of a first-born son. The young parents' prayers, hopes and pride ride with that kite as it ventures aloft to brave the vagaries of wind and achieve a successful flight, symbolic, perhaps prophetic, of the victories to be won by the newborn of their union.

Sagamihara is 60 miles from Tokyo's Shinjuku Station. It is a little over an hour's ride on a rapid transit train. Upon arrival at Sagami-hara, a taxi is recommended for transportation to the festival site, which is just a short distance from town. (The members of our tour tried the bus, went in the wrong direction, ended up in a farmyard asking directions by waving hands and using inadequate vocabulary and finally were rescued by a helpful police patrol who radioed for a taxi.)

The flying area is on a hill. There is an asphalt road with a masonry wall along the left side and a dirt field on the right about 100 yards wide, running parallel with the road. Beyond the field, there is a slight rise and dense tree growth edges the clearing. The wind seems to flow up the hill following the road and being funneled along by the trees, creating an ideal flying spot.

At the lower end of the field to the right, a raised platform stands with colorful red and white cloth draped from the handrail to the ground. It has a flat roofed top with balloons, flowers and banners dancing around the edge. Traditional

The Miracle of Sagamihara



Preparations for flying the great kite of Sagami-hara: top, braiding the bridle lines; center, a kite anchor; bottom, repairing damage before the next flight.

Japanese music is playing on loudspeakers and women in kimonos are posturing, turning and stepping in unison, some of them on the stand and others in front of it. The entire sight is colorful, traditional and very Japanese.

Just beyond, to the left, is a ponderous frame of cedar timbers, stoutly bound together with heavy rope. The center is filled with fieldstones for ballast. On top of the frame and every member are stacked sandbags, two and three deep, and the whole massive pile is tied to a ground stake that Paul Bunyan might have driven. Two stout poles back-brace the whole against overturning. The immovable object. This imposing anchor gives a prescience of things to come.

The kite tether is fastened to and snaked from this crib, the rope being over one inch in diameter. My eyes follow its line across the field, past a tent command post, with tables and chairs beneath for rest, refreshment and shelter for officials, police, politicians and press, on through the legs of onlookers to the hands of running men, their aqua hapi coats and light straw hats identifying them as the kite team, pulling the heavy line, having a tug of war—and winning!

Suddenly it appears. Swooping up vertically, it fishtails left, right, left, twin rope tails waving from each lower corner,

a web of 37 bridle lines draped from the square face to meld into the ship's hawser the men have in tow. The effect is stupendous. I have seen giant kites, but this is overwhelming. The face of the kite is 36 feet on each side, or 1296 square feet of surface. That is larger than the floor area of an average house. I run for the kite and the kite is sailing towards me. All at once this colossus is directly above and blotting out most of the sky. I can sense the forces involved to lift this behemoth—1640 pounds—and stand hypnotized as it swings ponderously above. A police whistle sounds an alert, the wind is dying, this hulk is coming down and it is directly overhead! I swing around, frantic arm waving is clearing people away, a woman pushes her baby in carriage pell-mell down the road. The group in my area dives for the stone wall. By crouching at the base, we have a safety triangle if the kite drops vertically; of course, we could be impaled if it sideslips into the wall.

The descent is quick but gentle, the kite poises face down, then drifts leaf-like to the ground, tearing some of the covering and ties, but these are quickly repaired. On the ground, I see the bow of the kite to be four or five feet and the tension to be held by a heavy wire strand at each main brace. The kite face consists of paper sheets 24 x 40 inches emblazoned with "supergraphics" in red and green. This is attached to a light split bamboo frame 8 x 8 inches each way and tied to bamboo poles 24 inches on center vertically by 40 inches on center horizontally. This second frame is criss-crossed, diamond fashion, with heavier bamboo poles. Poles are doubled at the center and edges.

The craftsmanship of the frame seems only fair; an edge sighting reveals great unevenness and variation in the bowing. It should be noted that the kite had been flown for two days and undergone many repairs, so these imperfections are no doubt the result of several hard landings. Viewing this kite at rest and being curious about the aerodynamics involved, I find that each square foot of surface has to lift a full pound and one-quarter of kite. This high weight-to-sail ratio seems at the time miraculous. I think: this should not be able to fly; but of course I have witnessed it. A 10 meter to 15 meter wind per second is given as the velocity required to lift the great *o'dako*. My wind chart suggests an 18 mile-an-hour wind, which would be equivalent to 8 meters; it does seem to jibe, it is possible and I can believe my eyes. I would estimate the wind at 18 to 22 miles per hour that day, at times dying, so a long sustained flight is not possible. Late in the afternoon the hand-



Getting ready to take the kite down field for launch at Sagami-hara.

made rope and bridle are removed from the kite and braided to store for the next year. The paper, already tattered, is stripped from the frame. Everyone gathers at the officials' tent to hear a short speech from the kitemaster. Then it's strike the tent, pack up and go home, for the giant kite is flown for two days only and on the third day the bones (bamboo frame) are ritually burned. Thus it goes until the next year when a new frame with its fresh paper cover is mated with the veteran bridle and line to again repeat the lifting of a mighty symbol over the roofs of the village. The symbol represents

a prayer for the planting, a thanksgiving for a child, a fresh opportunity for a better life, a new miracle of Sagami-hara. ♦

CARL POEHLER, an architect of Melrose, MA, toured Japan's kite festivals in 1979.

Since 1972, David Checkley has been taking groups of kite enthusiasts to Japan for the kite festivals in late April and early May. The 1980 trip leaves Seattle, WA, April 25 and returns May 10. The itinerary includes Hamamatsu, Sagara, Mori, Tokyo and Shirone. For details, contact Dave Checkley, P. O. Box 9081, Seattle, WA 98109; (206) 285-6262.

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KITES AND THE CAMBODIAN SPIRIT

By Paul Galloway

Khao I Dang—From a distance, you see them. Tiny, white, hovering in the wind. Scores of them. Above hundreds of primitive shelters housing thousands of the dispossessed—refugees who have endured wrenching hardship—kites are flying.

If the slaughter and death that have eviscerated Cambodia in the last four years signify the human capacity for atrocity and cruelty, these small kites affirm the resiliency of the human spirit.

The children make them from scraps of paper no longer than two hands. The tails are fashioned from the labels of food tins, glued together. The kite twine has been spun from plastic wrapping.

Khao I Dang is a new camp for Cambodian refugees. It is about 10 miles from the Cambodian border, and its 2000 acres are designed to hold 200,000 people who have fled the war and famine in their country.

The refugees arrive in buses and trucks from the huge settlements along the Cambodian frontier. After they are examined by volunteer nurses and doctors, those who are not admitted to the hospital are placed in groups of 100.

Ly-Thy Ngorn, a short, frail young man of 22 with piercing black eyes, was a medical student when Pol Pot took over Cambodia in 1975.

"I want to go to the United States," he said. "I have cousins who live in California. We admire your liberty, your human rights."

Ly-Thy's chances are remote. The Thai government may hold these refugees in the new camps indefinitely. There are 160,000 other Indochinese refugees in Thailand who are marked for relocation in other countries.

The United States has agreed to accept 14,000 refugees a month.

Walking among the narrow, low shelters, a Westerner will attract children, who appear suddenly, like schools of minnows. They will babble and touch the visitor, and they will smile.

It is not possible to know how deeply these children have been damaged emotionally and physically by their ordeals, but the smiles offer hope.

As we walked toward the roadblock at the entrance of Khao I Dang, preparing to leave, Ly-Thy called to me. I walked to the Red Cross tent to see what he wanted.

"I must ask you a question," he said.



Kites made from scrap paper are flown by two boys in a Cambodian refugee camp in Thailand.

"During [the regime of] Pol Pot, so many people were killed. It was worse than Hitler." He pronounced the name as "Hit-lee-er."

"In four years," Ly-Thy continued, "most of our intelligentsia were killed. Students, professors, doctors, all Lon Nol [non-Communist] soldiers.

"I understand the United States made an objection. You said there was no human rights under Pol Pot. My question is, why did not the United States help us?"

I tried to explain that the country was exhausted after the Vietnam War and in no mood to become involved in another war. I tried to explain that we were anguished about Cambodia but that the country was reluctant to become involved in such things again.

"But the United States is for liberty," Ly-Thy said.

I said I was very sorry. We shook hands and said good-by.

As we drove away, we saw them. Scores of them. Tiny, white and hovering in the wind. Kites were flying above Khao I Dang.

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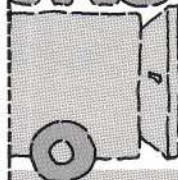
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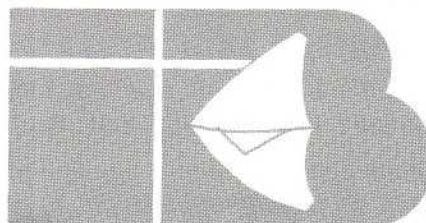
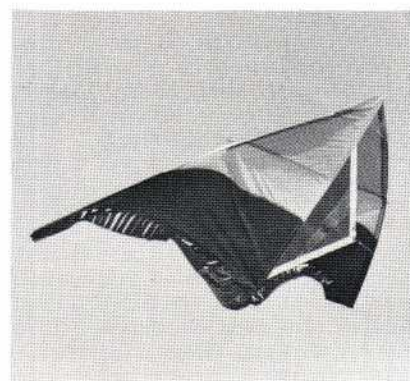
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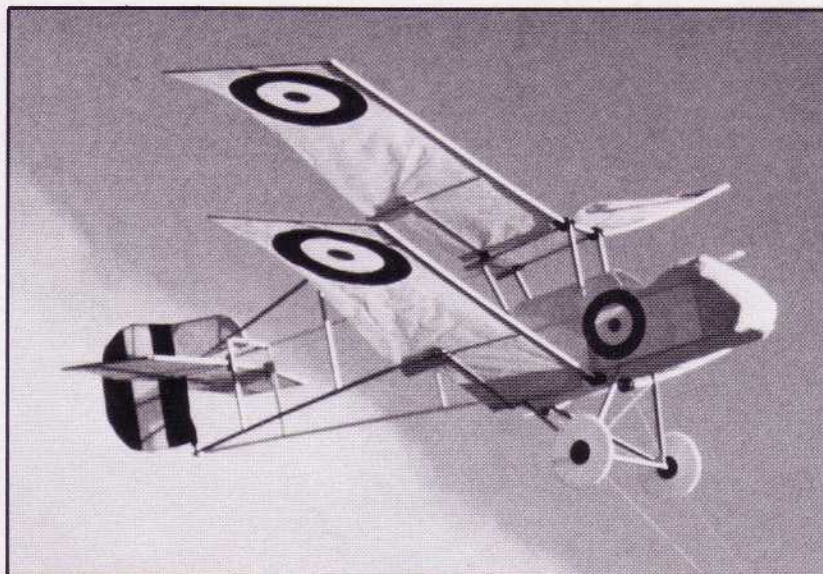


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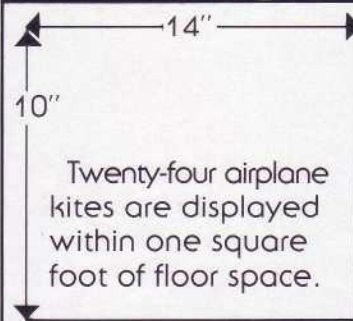
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